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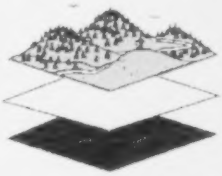
Dunlevy Creek Management Plan



BC Ministry of Sustainable Resource Management

January 24, 2002

DUNLEVY CREEK

MANAGEMENT PLAN

Prepared by:

BC Ministry of Sustainable Resource Management

with support from the BC Ministries of
Water Land and Air Protection
Forests
Energy and Mines
Oil and Gas Commission
Agriculture, Food & Fisheries
BC Assets and Land Corporation

January 24, 2002

Acknowledgement

The Dunlevy Creek Planning Team expresses its sincere appreciation to Forest Renewal BC for making funds available for this project through the Forest Renewal BC program to enhance Crown land use planning processes.

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Government's Endorsement

As Director of Sustainable Resource Management in the Omineca-Peace Region, I acknowledge the excellent efforts of the Planning Team in developing the Dunlevy Creek Management Plan. In approving this plan, I accept its recommendations in their entirety. I further support the collective responses by those agency managers reviewing and advising on the Dunlevy Creek Management Plan, as described in the section immediately following. The approved plan will be forwarded to appropriate agencies as policy direction.

Recognizing that strategic planning is dynamic, the Dunlevy Creek Management Plan will be adapted as new information becomes available and new technologies are proven. In this way, we will facilitate the continuous improvement of resource management practices with the objective of achieving truly sustainable integrated resource management.

Thank you for your continued interest and dedication to the Dunlevy Creek Management planning process.

Signed: *Orignial Signed*

T.P. (Phil) Zacharatos, R.P.F.
Regional Director
Omineca-Peace Region
BC Ministry of Sustainable Resource Management

Dated: _____

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Government's response to submissions from the Planning Team

The final meeting of the Dunlevy Creek Planning Process was held on July 12, 2001. As part of the planning process, members of the Planning Team were requested to submit written comments by June 15, 2001 on issues that the team was not able to resolve through discussion at the Planning Table. Letters were submitted by Les Parsons, Mayor Lenore Harwood, and James Rhymer (Appendix 2). The following paragraphs comprise the collective response to these submissions by those agency managers reviewing and advising on the Dunlevy Creek Management Plan.

The approved Dunlevy Creek Management Plan, the scope of which encompasses the Dunlevy SMZ within the Dawson Creek Forest District, will be implemented as provincial policy.

Response to submissions from the Planning Team

James Rhymer's letter states that industrial development in the Fort St. John Forest District must observe the same timelines for development as those identified in the Dunlevy Creek Management Plan (paragraph 1).

Response:

- Forestry and oil and gas operations outside of the Dunlevy SMZ are not subject to the recommendations in the Dunlevy Creek Management Plan. The approved Dunlevy Creek Management Plan will be forwarded to adjacent jurisdictions (i.e., administrative areas outside of the Dawson Creek forest district) so that operational planning might follow a consistent approach. The Ministry of Sustainable Resource Management's (MSRM) planning section will work with adjacent jurisdictions to ensure the intent of the Dunlevy Creek Management Plan is recognized.

Mayor Harwood's, James Rhymer's, and Les Parsons' letters express concerns regarding the need to coordinate the timing of all resource development within the SMZ (paragraph 1, 1, and 3, respectively).

Response:

- Government will do its utmost to accommodate the multiple users of the SMZ by following the strategic intent of the Dunlevy Creek Management Plan at an operational level.

  All resource users must follow legislation and policies. In particular, the Dawson Creek Land and Resource Management Plan (March 1999) acknowledges that access for resource development is an acceptable use of the land outside of Protected Areas (p. 33). For the Wildlife Habitat/Wilderness Recreation SMZ (e.g., Dunlevy Creek), the LRMP further provides direction to government agencies to 1) plan and manage access to minimize fragmentation and disturbance of identified resource values or features, and; 2)

manage the landscape to minimize long-term impacts to natural wilderness conditions (p. 93). The Dunlevy Creek Management Plan is consistent with the LRMP's direction. Refer also to David John's letter of July 11, 2001 (Appendix 2).

The Planning Team has been informed that long-term deferral of oil and gas activity is considered by government to be inconsistent with the Dawson Creek LRMP, as per Mr. David Johns' letter of May 10, 2001 (Appendix 2). Many members of the Planning Team are of the opinion that roaded access required by oil and gas exploration and development activities should be coordinated with forestry activities in a temporal sense (i.e., ±10 years). This does not mean deferral of oil and gas activity, as many members of the Planning Team feel that unroaded exploration and development methods such as directional drilling or helicopter-transported drilling technology are appropriate for use in time periods where forestry activity is not planned. The Planning Team has also been informed that until alternative access methods are proven to be feasible in all cases, government will not commit to broad strategies on alternative access methods (refer to Mr. David Johns' letter of July 11, 2001, Appendix 2).

Les Parsons' letter states that the Ministry of Energy and Mines (MEM) did not offer an alternative plan for oil and gas development (paragraph 2).

Response:

- MEM, as part of the Technical and Planning team, have worked over a period of one year to draft a plan that includes designated access corridors, non-roaded areas, and elevational restrictions limiting oil and gas development to directional drilling only. As well, the plan identifies seasonal restrictions and road deactivation requirements. Throughout the process, MEM and the OGC have explained why oil and gas exploration and development are not planned on the same timeline as forest development (e.g., hidden nature of the resource), and that heli-portable assisted drilling is not a proven technology in Western Canada at this time. These discussions are captured in the meeting minutes for the planning process.

Mayor Harwood's and James Rhymer's letters identify the need to recognize the Planning Table's consensus on the non-permanent development zone (paragraph 2, respectively).

Response:

- Government supports the recommended area where development is encouraged without roads if possible, or roads are designated as temporary access in the non-permanent development zone (Figure 8).

Mayor Harwood's and James Rhymer's letters identify the need to protect special features (paragraph 3 and 2, respectively).

Response:

- The site-specific protection of resource features (i.e., the hanging moss gardens) is supported by government as an acceptable approach and is accommodated by existing legislation.

Mayor Harwood's and James Rhymer's letters express concerns regarding clearcutting and block design (paragraph 4, and paragraphs 2 and 3, respectively).

Response:

- The Ministry of Forests recognizes the existing processes for review and approval of forest development plan cutblocks, silviculture prescriptions, and permitting of roads and harvesting activities. With respect to approved Cutting Permits 275 and 276, the District Manager of Forests has considered environmental as well as social information in his approval that predates the completion of this plan. Reconfiguration of these approved blocks will not be entertained as a result of the Dunlevy planning process.

  In the Forest Development planning process, the District Manager must consider both timber and non-timber resource values that affect the area under the plan. In order that he is satisfied that the Forest Development Plan and its associated silviculture prescriptions manage and conserve the resource values for that area, both ecological and social values are considered. In some situations, the ecology of a site might dictate that clearcutting is the system of choice to regenerate the desired forest. Alternatively, where a tree species indicates greater ecological amplitude, additional choices can be considered using silviculture systems that have greater social appeal. For example, horse logging may be recommended as a socially desirable harvesting method where partial cutting or selection silviculture systems are indicated. For these reasons, the Dawson Creek Forest District will not unilaterally require all silviculture prescriptions within the Dunlevy SMZ to use silviculture systems other than clearcutting.

  The Ministry of Water Land and Air Protection (previously, Environment Lands and Parks) reviews forest development proposals in the interest of maintaining and/or enhancing riparian, wildlife and wildlife habitat values, among others. In addition to public consultation during FDP development, public review of proposals is also legally required and accommodated by each forest company so that social values are addressed in advance of the FDP submission for approval. Opportunity for public review and comment on proposed forestry activities are required by legislation.

Les Parsons' letter expresses concerns regarding the uncertainty associated with the timing of oil and gas development, and recreational employment and investment (paragraphs 4 and 5).

Response:

- To facilitate timely public review and comment, oil and gas (subsurface) tenure proposals can be viewed in the District of Hudson's Hope Offices. Additionally, oil and gas proponents are required to notify the guide outfitter, trapper and any other tenure holder or stakeholder of their intended activities. Their applications must include a summary of identified issues and measures implemented or to be implemented to mitigate or resolve these issues, and also identify any outstanding issues.

  Oil and gas proponents are encouraged to work with stakeholders, consider their concerns, and attempt to reach a reasonable resolution of issues before an application is submitted. Should preliminary consultation indicate a need, the OGC will facilitate further discussions and negotiations. Consultation should include feedback from those potentially affected by or having concerns regarding a development; and project decisions are expected to reflect that feedback, where appropriate and reasonable. Communication and consultation provide greater certainty to stakeholders, and enable the coordination of resource uses.

Mayor Harwood's and James Rhymer's letters express concerns regarding visual quality (paragraph 5, respectively).

Response:

- Government recognizes that visual quality is an important issue, particularly in the Dunlevy SMZ. In a process that is separate from the Dunlevy Creek planning process, the District Manager of Forests establishes visual quality objectives for a given area using a visual landscape inventory and public input. In the case of the Dunlevy SMZ, at some future date, the District Manager will advertise new, draft visual quality objectives for this area using the updated visual landscape inventory. The public will be asked to review and comment on these draft objectives. The District Manager must consider both sources of information in establishing the new visual quality objectives. Once the new visual quality objectives are established, the District Manager will make this information known.

James Rhymer's letter recommends that an old growth management or wildlife habitat area (paragraph 4) be established on Adams Creek.

Response:

- The recommendation to establish an old growth management area will be forwarded as public input for consideration in future Landscape level planning. With respect to the alternative proposal that a wildlife habitat area be established, this information will be forwarded as public input for consideration in future Wildlife Habitat Area proposal development.

Les Parsons' letter makes references to the non-standard road construction at Coyote Creek within the Fort St. John Forest District, an area that is outside of the Dunlevy Creek SMZ.

Response:

- With respect to future access development within the Dunlevy Creek SMZ, the approach recommended in the Dunlevy Creek Management Plan follows the principles of adaptive management with the objective of continuously improving resource management practices.

CONCLUSION

The Dunlevy Creek Management Plan provides balanced policy direction in consideration of a range of economic, social and environmental values. The desired outcome optimizes the collective resource values using a coordinated, adaptive management approach to resource development. Implementing the plan will necessarily involve monitoring activities to ensure that the desired outcome is achieved. MSRM will monitor and assess the potential impacts from industrial access and development on the collective resource values in this SMZ. Monitoring of resource use activities will help to determine where revisions and improvements are needed.

EXECUTIVE SUMMARY

The Dawson Creek Land and Resource Management Plan (LRMP) was approved by government on March 4, 1999. The LRMP identifies several special resource management zones in recognition of their respective wildlife habitat / wilderness recreation values. The Dunlevy Creek Special Management Zone (SMZ) is one of these zones.

Under the direction of the LRMP, the Dunlevy Creek SMZ project was initiated in May 2000. This project resulted in a strategic management plan for the Dunlevy Creek SMZ that guides oil and gas development and the disposition of petroleum and natural gas tenures, and enables landscape level planning to guide forest development.

The Dunlevy Creek Management Plan includes recommendations for access, forestry, and oil and gas activities within the Dunlevy Creek SMZ. Ancillary recommendations are also offered for Recreation and Tourism. Implementation recommendations are further included.

The need to coordinate and manage access for oil and gas and forestry activities in the Dunlevy Creek SMZ has been identified as the primary issue facing resource managers. Some members of the Planning Team recommend that the concept of coordinated access be binding on other resource users as well. Finding the acceptable balance between industry's need for access, the public's wants, and appropriate access restrictions to conserve wildlife habitat and wilderness recreation values has been the crux of this issue.

In the Dunlevy Creek Management Plan, recommendations to coordinate resource development activities among tenured users and to plan resource developments in consultation with interested stakeholders in the Dunlevy Creek SMZ are intended to integrate resource planning and development in a manner that is consistent with the Dawson Creek LRMP. These superseding recommendations are intended to facilitate the communication of stakeholders' interests in integrated resource management planning processes. Open discussion, pre-planning, and consultation among tenured users and user groups will facilitate socially acceptable and environmentally sound development of resource opportunities associated with *the Dunlevy Plan* area.

Access within *the Dunlevy Plan area* will follow designated primary access routes that are designed to prevent access through the SMZ and to control the direction of access. Designated access corridors correspond with existing access restrictions for wildlife management units within the SMZ. Recommendations for conserving wildlife habitat thus complement the guidelines for coordinated access management. The schedule of access zoning for oil and gas activities included in the Recommendations for Wildlife Habitat is an important framework for achieving these wildlife habitat recommendations.

Forestry recommendations include strategic and area-specific guidelines for forest development, and are described in detail in the Recommended Forestry Plan. For each of five 'compartments' within the Dunlevy SMZ, a general description of forest resource values is presented, accompanied by recommendations for access management, harvesting and silviculture activities, and timing of development. The schedule of forest development described in the Recommended Forestry Plan is summarized by compartment in Table 1 (p.34). This schedule is an important guide to the forest sector for achieving the strategic objectives of *the Dunlevy Plan*. The forestry plan will be subject to periodic review (i.e., every 10 years).
Oil and gas recommendations similarly include strategic guidelines, and more specific

recommendations for geophysical activities, exploratory oil and gas wells, roads and access, production, and new oil and gas tenures. The schedule of access zoning for oil and gas activities included in the Recommendations for Wildlife Habitat is an important framework for wildlife habitat conservation.

Recommendations for plan implementation include monitoring and reporting on forestry activities (i.e., harvesting performance) and oil and gas developments (i.e., rehabilitation performance). MSRM will coordinate monitoring to ensure the approved plan is implemented as intended; review monitoring information with respect to implementation recommendations; and report the results through the annual Dawson Creek LRMP Implementation meeting.

Finally, processes for plan amendment and variance, interpretation and appeal, and dispute resolution are described. The Regional Director of MSRM will be responsible for review and approval of proposed minor amendments, and will establish the schedule and terms of reference for major amendments, consistent with current legislation, regulations, and policies. The amendment and review process will be consistent with current legislation, regulations, and policies, and will involve stakeholder, First Nations, and public consultation.

Where a concern is raised over the implementation of approved recommendations in the Dunlevy Creek Management Plan, the concern will be addressed directly to the affected agency(s). The responsible manager(s) will respond to the concern in writing. If the matter is not satisfactorily resolved, the concern will be forwarded to the Regional Director of MSRM for resolution recommendations.

Recommendations from the Regional Director of MSRM concerning the resolution of a dispute will be shared with participating regulatory agencies, and reported at the annual Dawson Creek LRMP Implementation meeting. Using the principles of continuous improvement, these recommendations may be reflected in a subsequent plan revision.

Direction/Guidance from Other Plans

The Dawson Creek Land and Resource Management Plan (LRMP) divides the planning area into 12 resource management zones (RMZ's) and categorizes these RMZ's by general management regime. The Dunlevy Creek RMZ is designated as a Special Management Zone (SMZ), and represents the area of the Dunlevy Creek Management Plan. The SMZ designation for Dunlevy Creek recognizes the significance of wildlife habitat and wilderness recreation values in the area. The LRMP recommends resource use in a manner that is sensitive to these values. Hence, resource exploration and development must consider and address identified resource values.

Identified resource values include important habitats for large mammals such as caribou, elk, and Stone's sheep; the area also provides opportunities for wilderness outdoor recreation experiences. A key strategy to protect these values is the management of road access.

The LRMP provides direction to the Energy sector to consider pre-tenure plans on a priority basis within the Wildlife Habitat/Wilderness Recreation RMZ. The LRMP also recommends that the Ministry of Forests adopt a reliable, repeatable and rigorous methodology for identifying and incorporating public/resource users' interests into integrated resource management planning processes. Both of these directions were catalysts for initiating the Dunlevy Creek local level planning process.

The general management guidelines in this plan will apply to Crown land that occurs within the SMZ. Within the SMZ, tenures issued and administered by agents of the Crown will be managed in a manner that is consistent with the Dawson Creek LRMP and recognizes the Graham River Integrated Resource Management Plan, where possible.

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1. INTRODUCTION

Purpose

The purpose of the Dunlevy Creek Management Plan (herein referred to as *the Dunlevy Plan*) is to guide oil and gas development and the disposition of petroleum and natural gas tenures and to enable landscape level planning to guide forest development (Appendix 1, *Terms of Reference*). Its management recommendations will be consistent with the objectives and strategies and strategic direction contained within the Dawson Creek Land and Resource Management Plan (LRMP). David Johns, serving as the Assistant Deputy Minister for the Land Use Coordination Office (LUCO), further clarifies the intent of the Dawson Creek LRMP with respect to oil and gas exploration, development and transportation. In a memorandum dated May 10, 2001, he states that "*On balance, it is my view that long term deferral as proposed is not consistent with the overall LRMP direction; it would block oil and gas exploration and development, it would not provide opportunity*" (Appendix 2).

The Dunlevy Plan represents a strategic land use plan—it is not a Higher Level Plan as defined in the *Forest Practices Code of British Columbia Act*. However, it is considered a pre-tenure plan for oil and gas under the provisions of the *2005 Memorandum of Understanding Respecting Operational Land Use Planning for Oil and Gas Activity in Northeast British Columbia (effective July 31, 1996)*[1].

This local planning process is designed to facilitate the transfer of methodology and recommendations to other similar planning areas.

Plan Area

The Dunlevy Creek Special Management Zone (SMZ), as designated in the LRMP, represents *the Dunlevy Plan* area. This SMZ is located in northeast B.C. along the north shore of Williston Lake within the Peace Foothills ecosection. The Dunlevy Creek SMZ is bounded to the north by the Graham South SMZ within the Fort St. John LRMP area. To the east lies Butler Ridge Park within the Dawson Creek LRMP area. To the west is the Schooler RMZ (zoned for General Resource Management) within the Mackenzie LRMP area.

The Dunlevy Creek SMZ encompasses the moist, very cold Engelmann Spruce-Subalpine Fir, and the Black and White Boreal Spruce biogeoclimatic zones. *The Dunlevy Plan* area includes Adams, Aylard and Dunlevy Creek drainages, and covers approximately 31 907 hectares (Figure 1). The SMZ occurs within the Dunlevy landscape unit (LU) to which a high biodiversity emphasis[2] has been assigned.

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[1] Signatories include B.C. ministries of Environment Lands and Parks, Energy and Mines, and Forests; Westcoast Energy, Canadian Association of Petroleum Producers, and Department of Fisheries and Oceans.

[2] Legal objectives for landscape units, specifically old growth management areas and wildlife tree retention, must be in place by July 31, 2003, at which time landscape unit boundaries and biodiversity emphasis assignments will be made known.

Methods

In consultation with the Interagency Planning Team[3], with consideration of stakeholders' concerns regarding development activities within SMZ's, a proposal was submitted to the Interagency Management Committee (IAMC)[4] to fund an SMZ project for the Dunlevy Creek area. The proposal was approved for SMZ funding by the Land Use Coordination Office (LUCO), and the project commenced in April 2000.

A series of workshops and meetings were offered to establish the Planning Team, to develop terms of reference, and to facilitate the gathering and exchange of information, identification of values, and progressive discussions of issues relating to resource management planning.

Terms of reference for *the Dunlevy Plan* (Appendix 1) were endorsed by the ministries of Forests, Environment Lands and Parks, and Energy and Mines on September 14, 2000. Following endorsement of the terms of reference, *the Dunlevy Plan* was developed by an interagency Technical Team[5] with input from the Planning Team[6] (Appendix 1).

The Technical Team was responsible for drafting recommendations on management plan objectives and strategies, and the compilation and representation of data. This team was also responsible for ensuring that the Peace Managers Committee and the Omineca-Peace Interagency Management Committee were informed of planning progress. The Planning Team was responsible for reviewing *the Dunlevy Plan* and providing advisory comments with the intent of achieving a consensus agreement on these recommendations prior to them being forwarded for approval.

The Dunlevy Plan was developed using the best available information. Existing inventory information for *the Dunlevy Plan* area was provided by government resource agencies and Canadian Forest Products Ltd., and includes management objectives and strategies identified in the Dawson Creek LRMP; forest cover information; existing tenures; petroleum and natural gas, mineral, coal and coalbed methane potential; biophysical, wildlife, fisheries and habitat inventories; and existing developments (e.g., roads, wellsites, cutblocks). *The Dunlevy Plan* incorporates inventories used in the current Timber Supply Review and the Graham River Integrated Resource Management Plan. In addition, specific values identified by the Planning Team have been recognized in *the Dunlevy Plan* (Dunlevy Creek Special Management Zone Information Report, Appendix 2, lists Planning Team meetings and participants).

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[3] Interagency Planning Team was established to develop Dawson Creek's recommended Land and Resource Management Plan and to implement the approved plan. It is comprised of agency representatives from Agriculture Food and Fisheries, Forests, Environment Lands and Parks, Energy and Mines, B.C. Oil and Gas Commission, and B.C. Assets and Land Corporation.

[4] The responsibilities of the Interagency Management Committee are to coordinate and ensure LRMP implementation; and to review and provide recommendations on proposed amendments to the LRMP.

[5] Technical team comprised of ministry staff from Environment Lands and Parks, Energy and Mines, and Forests, and; staff from B.C. Oil and Gas Commission; and B.C. Assets and Land Corporation.

[6] Planning team comprised of the technical team in addition to stakeholders with an interest in the area.

Management recommendations were developed by the Technical Team and were vetted by the Planning Team. Written comments were submitted by the Planning Team, and were addressed by the Technical Team in a subsequent draft. Prior to finalizing *the Dunlevy Plan*, a workshop was held with the Planning Team to discuss the recommendations and to identify where further improvements were warranted. The recommended plan was endorsed by the Planning Team (subject to comments summarized in Appendix 4), circulated to local agencies for further revision and subsequent agreement, and forwarded to the Regional Director of MSRM for final approval and direction for implementation.

2. *RESOURCE VALUES AND USES*

ACCESS

The LRMP indicates that road access is minimal throughout the SMZ, and its management is a high priority. The spatial and temporal management of motorized access is important to the sustainability of wilderness attributes and wildlife habitat. Dawson Creek LRMP recommends sensitive access management[7] for the Dunlevy Creek SMZ, although it does not prescribe access restrictions.

There are currently three levels of access management within *the Dunlevy plan* area; all are designated under the *Wildlife Act*:

1. The use of motor vehicles is prohibited within the entire plan area above 1400 metres in elevation. (*However, authorization for motor vehicle access can be applied for to the regional wildlife manager*[8]; *refer also to Access Recommendations, item 20.1*). The use of snowmobiles (< 450 kilograms in weight) is permitted between November 1 and April 30.
2. In the area east of Aylard Creek and west of Dunlevy Creek; no use of ATV's (including snowmobiles and motorcycles) for the purpose of hunting, or to transport hunters, hunting supplies, wildlife or firearms to or from the location of wildlife.
3. For the remainder of *the Dunlevy Plan* area there is no use of ATV's (including snowmobiles and motorcycles) for the purpose of hunting, or to transport hunters, hunting supplies, wildlife or firearms to or from the location of wildlife between the hours of:
    - 4:30 am to 8:00 am from Aug. 15 to Aug. 30
    - 5:30 am to 9:00 am from Sept. 1 to Sept. 30
    - 6:30 am to 10:00 am from Oct. 1 to Oct. 31

Existing access routes and restrictions are shown in Figure 5. Access to the northeast corner of *the Dunlevy Plan* area starts at location 56°15', 121°45' near Farrell Creek. The access road, locally known as the Husky Road, heads north along Pasture Road to the Farrell Creek Forest

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[7] Sensitive Access Management involves identifying resource features and the means for their conservation in site- and time-specific planning and implementation recommendations. Sensitive Access Management involves some degree of limitation to or within a specified condition or range of conditions (spatial and/or temporal); and may include (weight/load) restrictions, seasonal scheduling, closures, road deactivation, reclamation strategies, or in special circumstances, site specific, prohibited access. Where proposals for new access create significant risk to sensitive resource features (e.g., alpine bogs, erodible soils on steep slopes in alpine areas, dunes, salt licks), proponents are obliged to identify and consider alternatives of lower risk using the best information possible. Alpine and sensitive subalpine areas are slower to recover from the effects of disturbance, and Sensitive Access Management direction should be utilized in areas of significant resource value in order to conserve their values over time. This information will be used by land and resource managers within established regulatory review processes.

[8] Section 19 of the *Wildlife Act* authorizes a regional manager to permit activities that are prohibited in this Act, or to omit activities required by this Act or the regulations, subject to and in accordance with those conditions, limits and period or periods the regional manager may set out in the permit, and despite anything contained in this Act or the regulations.

Service Road, crosses Haystack Road over Kobes Creek, then crosses Butler Ridge Road. It then heads south to Windfall Creek Road and continues to Upper Level Road and ends at well location b-A4-H/94-B-07 (approximately 56°20', 122°30').

The Dunlevy Road provides access to the eastern portion of *the Dunlevy Plan* area via Butler Ridge Park. The road extends from the Dunlevy Recreation Area to the hanging moss gardens and the existing well site (a-040-L/094-B-01). The Dunlevy Road was considered a non-status road prior to the Dawson Creek Forest District issuing a road permit to Canadian Forest Products Ltd. in 1990 (R03958) to access Cutting Permit 302 (presently within the boundaries of Butler Ridge Park). This permit has subsequently expired. The Dawson Creek Forest District issued a second road permit (R12000) in 2000 to Canadian Forest Products Ltd. to access Cutting Permit 275 within Tree Farm License (TFL) 48.

Williston Lake provides access to the area by water. The Portage Mountain Yacht Club is an active user of this resource. However, due to unstable slopes and potential damage to habitat, designated landings have not been developed along the north shore west of Dunlevy inlet.

There are several trails in the area that have historic public recreational use including those in the vicinity of Dunlevy Creek and Dresser Creek, many of which were initially created as fire guards, and the trail along Twenty Mile Ridge. Types of recreational access include hiking, horseback riding, ATV's and snowmobiles.

There are no administrative restrictions to accessing the area by air. Helicopter and fixed-wing flights are frequent modes of air travel. Hang-gliders and ultra-lites have not generally been used.

ADJACENT PARK VALUES

Butler Ridge Park incorporates the easternmost portion of the Dunlevy Creek watershed, north of Williston Lake, and the western side of Butler Ridge. Its western boundary is adjacent to the Dunlevy Creek SMZ. The park includes the Dunlevy Recreation Area and a portion of the shoreline adjacent to the eastern side of Dunlevy inlet on Williston Lake.

The park represents a portion of the Peace Foothills ecosection. It encompasses the moist, very cold Engelmann Spruce-Subalpine Fir, and the Black and White Boreal Spruce biogeoclimatic zones. The park provides good examples of the forests of the Rocky Mountain Foothills and valley bottom to alpine ecosystem connectivity.

Butler Ridge Park provides critical winter range for caribou, Stone's sheep habitat as well as moose and elk winter range. These attributes contribute to the park's regionally significant value as a wildlife viewing area.

The Butler Ridge area has historically supported a number of recreational activities including hiking, cross-country skiing, hunting and fishing. The area is also recognized as a traditional use area for First Nations, and continues to support First Nation's cultural values.

CULTURE AND HERITAGE VALUES

Cultural Heritage

First Nations' Traditional and Cultural Values

First Nations typically use *the Dunlevy Plan* area for treaty rights. Treaty rights are protected under the *Constitution Act* (section 35). Treaty rights in relation to natural resources are defined within the text of Treaty 8 as:

> *And Her Majesty the Queen HEREBY AGREES with the said Indians that they shall have the right to pursue their usual vocations of hunting, trapping and fishing throughout the tract surrendered as heretofore described subject to such regulation as may from time to time be made by the Government of the country, acting under authority of Her Majesty, and saving and excepting such tracts as may be required or taken up from time to time for settlement, mining, lumbering, trading or other purposes.*

Government is required to consult with First Nations to determine whether there is potential for infringement of treaty rights, and if that infringement is justifiable. Today, the area is used primarily by West Moberly, Halfway and Saulteau First Nations. A list of Treaty 8 First Nations and contact information is provided in Dunlevy Creek SMZ Information Report, Appendix 3.

Ministry of Small Business Tourism and Culture

The Ministry of Small Business Tourism and Culture is responsible for recording archaeological features in the province of British Columbia. There are four recorded archaeological sites that are immediately adjacent to *the Dunlevy Plan* area. A current list of declared archaeological features within *the Dunlevy Plan* area can be obtained through the B.C. Ministry of Small Business Tourism and Culture.

Natural Heritage

Geologist F.H. McLearn of the Geological Survey of Canada initially reported dinosaur footprints in the Peace River Canyon in 1922. These footprints remained untouched until 1932 when Charles M. Sternberg of the National Museum of Canada investigated the site. Evidence of eight new species of dinosaur was indicated. Specimens were collected where possible, casts were made and trackways were documented. The Royal Ontario Museum (ROM) sent many expeditions to explore the site and record evidence prior to the flooding of the Williston Lake reservoir in the 1960's (http://www.rom.on.ca/). The Provincial Museum of Alberta sent further expeditions into the Peace River Canyon in 1970's (http://www.gov.ab.ca/mcd/mhs/pma/pma.htm and http://www.gov.ab.ca/mcd/mhs/rtmp/rtmp.htm). High water obliterated Sternberg's initial discovery, however other rich sites were discovered. More than 100 trackways were mapped, many specimens were collected and several casts were made.

Under the *Land Act*, recent permits have been issued to the ROM for paleontological collection. The first permit was issued in 1986 and the most recent in 1999. The Museum has collected several ichthyosaur specimens in the general area (http://www.tyrrellmuseum.com/encyclo/i.html).

During paleontological excavation, a small amount of rock is removed containing the fossil. Impacts on the area are similar to natural erosion. Most collections are executed at McLay and Jewett Spur, Brown's Hill and Pardonet. Within *the Dunlevy Plan* area, the mouth of Aylard Creek is a rich site and has provided samples during some of these expeditions. The entire area is referred to as the Gething formation. The collected specimens are brought back to the Museum where it takes precise efforts to remove the hard rock in order to reveal the skeletons. Preparing specimens can take over a year.

There have been recent efforts to collect specimens from beneath the water. Research of the collected evidence has helped paleontologists to determine habitat characteristics, reproduction and rearing practices, and social habits, and to calculate speed of movement.

Research Use

Within *the Dunlevy Plan* area, there are two map reserves designated under section 14 of the *Land Act*, each covering an area of 0.36 hectares (references 7401603 and 7401604). Their purpose is for Environment, Conservation and Recreation Science Measurement/Research. These *active* reserves were established on May 25, 1984 by BC Hydro as part of a geological monitoring system in which measurements are scheduled every 10 years. Measurements were obtained in 1984 and 1994; and are scheduled for collection in 2004. The reserves are situated near the mouth of Aylard Creek, west of the area referred to as *Gold Bar*. Specifically, reserve 7401603 is situated on Branham Ridge, while reserve 7401604 is situated in the vicinity of Horseshoe Hill Creek (Figure 2).

In addition, a growth and yield plot (reference 920-2-3-3171) covering one hectare is situated due north of silviculture opening 94B018-003 in the headwaters of Dunlevy Creek, northeast of a locally significant ecological feature (i.e., moss gardens). Canadian Forest Products Ltd. has indicated within their Forest Development Plan (2001-2006) a further 25 growth and yield plots located in the southern portion of Dunlevy drainage, the majority of which are situated on the eastern side of Twenty Mile Ridge in a clustered arrangement around approved cutting permits.

Specific locations of these reserves are available through British Columbia Assets and Lands Corporation (BCALC).

ENERGY

Oil and Gas Resources

The Dunlevy Plan area is considered to have major multi-zone gas potential and is given a rating of very high potential. Potential gas reservoirs are the Baldonnel, Halfway, Permo-Penn, the Debolt/Prophet and a conceptual play for a Keg River Band Edge. To the north of Butler Ridge Park, Husky has recently made a very large gas discovery with a well that has produced 298 million cubic metres since November 1998 from the Debolt and lower Debolt thrust sheets.

There have been at least 12 geophysical programs conducted within the Dunlevy Creek SMZ and adjacent area since 1990. The total distance of these programs is approximately 75 kilometres. Most of the activity has concentrated adjacent to Butler Ridge and north of the Williston Reservoir. The only area where geophysical has not been conducted is the northwest part of *the Dunlevy Plan* area.

Within the Dunlevy Creek SMZ, a well was drilled on one tenure in 1979. An access road was constructed to the wellsite from the southeast part of *the Dunlevy Plan* area. The well is listed as an exploratory wildcat and as suspended gas production. An existing gas pool and field is located over this tenure; however, until a gathering system moves closer or a proponent finds it economically viable, it is unlikely to be tied in to a processing facility. The general area has seen drilling activity for thrusted Triassic (Sukunka type plays) and Mississippian targets similar to Sikanni type plays.

Oil and Gas Tenures

There are five petroleum and natural gas tenures located either within or partially within the Dunlevy Creek SMZ. Tenures were issued from 1968 up until April 1999 and include tenures 12974, 48444, 49398, 47790 and 44683. In 2000, there were two requests for tenure in *the Dunlevy Plan* area; a third request was made in 2001. Petroleum and natural gas tenures, and wellsites are shown in Figure 4.

Geothermal Resources

The Geothermal Resources Act defines geothermal resources as the natural heat of the earth and all substances that derive an added value from it, including steam, water and water vapour heated by the natural heat of the earth and all substances dissolved in the steam, water or water vapour obtained from a well, but does not include (a) water that has a temperature less than 80° C at the point where it reaches the surface, or (b) hydrocarbons.

There is a small portion in the east of *the Dunlevy Plan* area within a potential low-temperature geothermal resource (Figure 7). Potential uses of low-temperature geothermal resources include hotspring development, domestic and district heating, and light industrial uses such as greenhouses, fish hatcheries and fruit dryers. Potential in this area has been identified from petroleum well temperatures greater than 35°C/km and a spring with a large flow of hot water (latitude 55° 59'; longitude 122° 00'). Deep-seated regional faulting of layered sediments having deep flow systems are the conduits for, and the source of, geothermal fluids.

Mineral/Coal Resources

Mineral potential is ranked as low for *the Dunlevy Plan* area (ranked 1 or 2 on a scale of 1 to 10). There is a large area along the eastern boundary of *the Dunlevy Plan* area that is rated moderate for coal potential. This area is underlain by the coal-bearing Gething Formation, containing a number of seams generally less than two metres in width.

The coal resource in the general area is reported to be 450 million tonnes. It is unclear how much of this figure is specific to *the Dunlevy Plan* area. Any resource estimate should be considered as speculative because of the lack of extensive drilling.

Mineral/Coal Tenures

There are no mineral titles within the area.

In the early 1900's, the Packwood Mine mined two seams reported to be over one metre thick in an area between Gravel Hill Creek and Cust Creek. The first coal lease within *the Dunlevy Plan* area was issued in July 18, 1912. There are no details on the amount of coal produced.

The area was explored in 1973 by Utah Mines (one hole drilled) and in 1981 by Hudson Bay Oil and Gas (eleven holes drilled). Hudson Bay drilled three holes in the Butler Ridge area east of *the Dunlevy Plan* area, an area considered to have even better potential.

Coalbed Methane Resources

Coalbed methane is a natural gas. Coalbed methane resources associated with this coal resource (150 million tonnes) at shallow depths are not expected to exceed 1.9 million cubic metres. Where the rights to the resource are held by the Crown, such rights are conveyed through provincial petroleum and natural gas tenures under the *Petroleum and Natural Gas Act*. All regulation of drilling, geophysical operations, and other field activities is carried out by the Oil and Gas Commission. The Oil and Gas Commission is responsible for authorizations and approvals related to the drilling of test holes. Refer also to Dunlevy Creek SMZ Information Report, Appendix 5, *Coalbed Methane Policy*.

Water

There are three principal drainages within *the Dunlevy Plan* area: Dunlevy Creek, Aylard Creek and Adams Creek. The Adams and Aylard watersheds are in a relatively pristine condition while the Dunlevy drainage has had some industrial development including petroleum exploration and timber harvesting. Since there are no domestic water licenses within *the Dunlevy Plan* area, water use is limited to that required for outdoor recreation and commercial recreation operations.

One objective of the Dawson Creek LRMP general management direction for water management is to sustain and manage, where possible and appropriate, the natural stream flow regime (timing of flow, water quality and quantity) for identified watercourses, recognizing that natural hydrologic processes are beyond the control of resource managers (*Dawson Creek LRMP* p.23). The intent is to manage industrial activities to sustain natural flow regime, timing, water quality and quantity.

Williston Lake is a BC Hydro reservoir and has a flood reserve of 2225 feet (678 meters). Water levels fluctuate annually from approximately 672 meters to 640 meters, with high water typically occurring in August and low water in April.

FISH AND WILDLIFE

The Dunlevy Plan area lies within the Peace/Williston Fish and Wildlife Compensation Program (PWFWCP) area of interest. This program is a cooperative venture of BC Hydro and the Ministry of Water, Land and Air Protection (WLAP), supported by funding from BC Hydro. The program was established to enhance and protect fish and wildlife resources affected by the construction of the W.A.C. Bennett Dam on the Peace River, and the subsequent creation of the Williston Reservoir. Since it's inception in 1990, the program has expended considerable resources in evaluating fish and wildlife populations and habitats within the Williston watershed, including the Dunlevy plan area. Much of the information used in developing this plan is derived from studies and inventories initiated and funded by the Peace/Williston Fish and Wildlife Compensation Program.

FRBC recently funded a reconnaissance level inventory of fish and fish habitat which included the Dunlevy plan area (Hatfield 2000). A list of inventories and studies conducted in *the Dunlevy Plan* area can be obtained through WLAP.

Fish Resources

All of the major drainages, Adams, Aylard, Dresser and Dunlevy Creeks, within the Dunlevy Plan area are known to support sports fish.

In the summer of 1995, a fish trapping program on Dunlevy Creek recorded 9 fish species, totalling over 28,000 individuals. Sport fish of management concern include Kokanee, Rainbow Trout, Bull Trout and Mountain Whitefish. Extensive juvenile stocking was initiated in Dunlevy Creek in the early 1990s. The PWFWCP stocked approximately 25,000 Kokanee per year into the stream from 1990 through 1994. Approximately 8,000 juvenile Rainbow Trout were also released into the creek in 1990 and 1991. There are both spring and fall spawners in the Dunlevy drainage; with Rainbow trout spawning in spring and Kokanee spawning in the fall. Bull Trout were found to be in the stream in the summer but there was no indication of spawning; it appears the Bull Trout are using the stream for summer foraging only.

Further fish sampling in the Dunlevy watershed has recorded Rainbow Trout in several tributaries indicating that fish habitat is present in more than just the main stem. The full extent of suitable fish habitat and fish presence is not known at this time.

Wildlife Resources

Wildlife values are high throughout *the Dunlevy Plan* area with ungulate capability[9] and suitability[10] at or near the highest ratings found in the province. The frequent burn history of the area has resulted in a mosaic of seral stages and habitat types, which in turn results in a diversity of wildlife. Birds, small mammals and fur-bearers are abundant through out the area.

Elk, moose, mule deer and white-tailed deer are common within the forested habitats and winter on the early seral, low elevation, south aspects along Williston Lake. These south aspect winter ranges are rated as class 1 for elk and moose, the highest provincial rating possible. A recent elk inventory (Wood 2000)) found approximately 300 elk wintering within *the Dunlevy Plan* area.

Stone's sheep and caribou are found in the alpine habitats of Butler and Twenty Mile ridges through out the year with sheep wintering at lower elevations where suitable escape terrain is present. Both the alpine and the low elevation slopes are rated as class 2 for sheep. The alpine

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[9] Capability is defined as the ability of the habitat, under the optimal natural (seral) conditions for a species to provide its life requisites, irrespective of the current condition of the habitat. A six-class system is used for ungulates where substantial knowledge of habitat use is known.

Class 1	High	76-100% of provincial best
Class 2	Moderately high	51-75% of provincial best
Class 3	Moderate	26-50% of provincial best
Class 4	Low	6-25% of provincial best
Class 5	Very low	1-5% of provincial best
Class 6	Nil	0% of provincial best

[10] Suitability is defined as the ability of the habitat in its current condition to provide the life requisites of a species.

and sub-alpine forests are also considered to be class 2 caribou habitat.

Maintaining and Enhancing Wildlife Values

Due to the high ungulate capability, the Dunlevy plan area has been the focus of numerous enhancement projects. In 1985, BC Environment, in co-operation with the Hudson's Hope Rod and Gun Club, initiated an elk transplant project to augment a small native herd residing in the area. Between 1985 and 1987, 145 elk were transplanted from the Kootenays to a release site near Dunlevy Lake.

The creation of the Williston Reservoir resulted in the flooding of a significant area of low elevation, ungulate winter range. To offset the impacts of this habitat loss, a series of prescribed fires have been used to improve habitat suitability on the remaining winter range as follows:

- 1986 exact location and hectares not documented
- 1990 Aylard creek to Dunlevy inlet, approx. 600 ha
- 1992 Brahnam slide, 225 ha
- 1993 Brahnam slide, 270 ha
- 1995 Brahnam slide, 600 ha
- 1996 Adams creek and Aylard creek, 450 ha
- 1997 west of Dunlevy inlet, 75 ha

The PWFWCP has purchased the remnant portions of three district lots (329, 330 and 2813) along Williston Reservoir for the protection of wildlife habitat. These lots, totalling 185 ha, are under the ownership of Nature Trust of BC and are managed by WLAP. An additional property, lot 2042, has been purchased by the Rocky Mountain Elk Foundation for the protection of ungulate habitat.

Currently, there are no approved proposals for wildlife habitat enhancement on Crown land within the SMZ. The PWFWCP is presently conducting wildlife studies in the area and additional proposals for habitat enhancement and maintenance are expected.

Guide Outfitting Tenures

Guide outfitting is an historical activity in *the Dunlevy Plan* area, originating in the 1930s. Guide outfitter tenures were not established in BC until approximately 1960/61. Currently, two guide outfitting tenures occur within *the Dunlevy Plan* area 731P002 and 731P001. The former tenure includes Adams, Aylard and Dunlevy drainages. The latter tenure is predominantly west of *the Dunlevy Plan* area but includes the area southwest of the unnamed drainage located between Adams and Schooler creeks in the south-westernmost corner of the SMZ.

Within 731P002, one special use permit (SUP 16403L) represents a license of occupation (i.e., guide outfitter's cabin). In addition, one map notation (8004791) represents a commercial hunting and fishing camp covering an area of 1 hectare.

Trapping Tenures

Two trapping tenures occur within *the Dunlevy Plan* area (e.g., 736T001 and 731T004). The former tenure covers Adams, Aylard and Dunlevy drainages. A portion of the latter tenure occurs southwest of the unnamed drainage located between Adams and Schooler creeks in the southwestern-most corner of the SMZ. Both traplines are long standing tenures, with current records for 736T001 extending back to 1949 and to 1939 for 731T004.

Angling Guide Tenures

There are no angling tenures within *the Dunlevy Plan* area, however tenure exists for Williston Lake.

FORESTRY

Forest Resources

Within the SMZ, higher elevations support alpine tundra with Engelmann spruce and subalpine fir forests on mountain slopes. These stands gradate into spruce and lodgepole pine stands in the foothills; and, on the lower elevation plateau's, aspen/balsam poplar and aspen-spruce mixedwood forests extend to the shore of Williston Lake.

Forests in the Dunlevy area are predominated by immature deciduous/pine/spruce stands of moderate productivity (approx. 66% of *the Dunlevy Plan* area); immature to mature deciduous mixedwood stands of good productivity (approx. 17%); and mature pine/spruce stands of low productivity (approx. 17%). Adams drainage is characterized by mature and old seral spruce forests, while mixed forests of varying ages and structure have developed from significant burns within Aylard and Dresser drainages.

Within the Dunlevy Creek SMZ, the area of forested land base is estimated at 18 660 ha. Forested land includes riparian areas, visually constrained areas, low productivity sites, black spruce sites, problem forest types and inoperable areas. The area of timber harvesting land base is estimated at 10 500 ha, representing approximately 8 200 ha of coniferous leading forest and 2 300 ha of deciduous leading forest. Excluded area includes approximately 270 ha of private land.

The current allowable annual cuts (AAC's) that were determined through the Timber Supply Review process for the TSA and TFL areas exclude Class A parks, protected areas, and private lands[11] (Pederson 1996a, 1996b). However, these *excluded* Crown lands can contribute to landscape level biodiversity objectives assuming their management objectives provide for old growth forest and wildlife tree reserves. For comparative purposes, the timber harvesting land base is estimated at 800 000 ha of the 2.3 million ha gross area of the TSA while that in the TFL is estimated at 287 000 ha of the 638 000 ha gross area. The timber harvesting land base within the Dunlevy SMZ represents less than 4 % of the TFL's timber harvesting land base. The timber harvesting land base in the TFL represents approximately 26% of that in the Dawson Creek Forest District (including both TFL and TSA).

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[11] The current AAC for TFL 48 is 580 000 m^3 of which 525 000 m^3 is attributed to coniferous leading stands while 55 000 m^3 is attributed to deciduous leading stands. The current AAC for TSA 41 is 1 733 033 m^3 of which 846 533 m^3 is attributed to coniferous leading stands including a partition of 100 000 m^3 for small diameter pine, and 886 500 m^3 is attributed to deciduous leading stands.

Forest Tenures

The entire Dunlevy Creek SMZ is covered with existing forest tenures including Block 1 of TFL 48, which extends east of *the Dunlevy Plan* area, beyond Butler Ridge Park; and portions of pulpwood agreements (PA's) 7 and 13 for coniferous and deciduous timber, respectively (Figure 2). PA 7 covers the entire SMZ and extends south-southeast into the Dawson Creek Timber Supply Area (TSA), north into the Fort St. John Forest District, and west into the Mackenzie Forest District. PA 13 covers the southeast third of the SMZ and extends south-southeast into the Dawson Creek TSA, and north into the Fort St. John Forest District.

TFL 48 was first awarded to Canadian Forest Products Ltd. (Canfor) on December 1, 1988; and replaced on December 1, 1998. PA 7 was initially awarded to Intercontinental Pulp Company Ltd. on January 24, 1966. Intercontinental Pulp Company later became Prince George Pulp and Paper Ltd. (circa 1986), and subsequently amalgamated with Canfor. The current PA 7 is in effect from January 24, 1997 to January 24, 2022, and is non-replaceable. Both tenures are currently managed by Canfor.

Canfor has approved Category A blocks in their Forest Development Plan that are situated west of Dunlevy Creek and north of Dunlevy Lake. Canfor has applied for authorization to develop access and harvest these cutting permits. Presently, the road permit for accessing the cutting permits has been approved (partially constructed in 2000), while the harvesting has not yet been approved.

PA 13 was first awarded to Louisiana-Pacific Canada Ltd. (LP) on January 1, 1989, and renewed on January 1, 1999. It is currently managed by LP. To date, LP has not developed roads or harvested any timber sale licenses within *the Dunlevy Plan* area.

Forest Inventory

While a general description of forest resources is appropriate at a zonal level, detailed and current forest inventory information is an essential component of the allowable annual cut determination for the TFL in its entirety. Inventory information provides managers with the means to evaluate their corporate business through regeneration cycles. It forms the basis of strategic and operational plans. As such, it provides the context for communications between forest managers and stakeholders, and helps to build a collective understanding of resource values.

The need for an inventory specific to TFL 48 was identified as a priority by B.C.'s former Chief Forester in 1988, and reiterated by the current Chief Forester in 1996. This inventory is scheduled for completion and inclusion in Canfor's Management Plan No. 3 for the TFL. In response to this direction, Canfor embarked on, and recently completed a comprehensive Vegetation Resources Inventory (VRI), and also updated the visual landscape inventory. Since viewpoint locations used in the latter inventory were expanded, the updated inventory information may result in a modification of existing known visual quality objectives (VQO's), pending review and approval by the District Forest Manager (refer also to *Visual Quality* subsection).

RANGE

Range Resources

In the Peace region, areas suitable for grazing are generally located at lower elevations. In *the Dunlevy Plan* area, range use occurs within the Boreal White and Black Spruce. Native forage is most abundant in early seral forests. Early seral forests dominated by lodgepole pine, aspen and balsam poplar provide a rich source of palatable vegetation. Blue-joint, hairy wildrye and slender wheatgrass are common. Peavine, American vetch, fireweed, asters and shrubs including northern rose, saskatoon, and willows also provide forage.

Range Tenures

Within *the Dunlevy Plan* area, a range tenure covering approximately 550 hectares was initially awarded in January 1981 (reference 885-9-3-1-7051) as a renewable, one-year grazing permit. This tenure was located north of Williston Lake adjacent to Lot 3181, west of Dunlevy Creek, and included Dunlevy Lake. This tenure is no longer active. To the northwest of this tenure, a similar tenure covering approximately 500 hectares was initially awarded in 1981 (reference 885-9-3-1-7113). This tenure is no longer active.

A 10-year grazing license was initially awarded in January 1987 (reference RAN 072792, map notation 885-9-3-1-7159) and expired in December 31, 1999. This tenure was recently issued to another party in January 1, 2000, as a 10-year grazing license (reference RAN 074239).

The grazing license area is oriented in a north-south direction on the eastern side of Dunlevy Creek. Its southern boundary is situated approximately 150 metres north of the confluence of Dunlevy and Dresser creeks. The tenure covers an area of 86 hectares, and supports 50 Animal Unit Months[12] (AUM) for the purpose of grazing livestock (i.e., by the guide outfitter).

Grazing on this Crown tenure starts on June 1st and ends on October 31 annually. Fees for use of Crown range forage are calculated on an AUM basis, and are set by regulation.

Range, trapping and guide outfitting tenures, and alienated lands are shown in Figure 3.

RECREATION AND TOURISM

Recreation & Tourism Values

The Dunlevy Plan area supports a diverse range of public and commercial outdoor recreation and tourism opportunities. Wilderness recreation activities that are associated with this SMZ include hiking, wildlife viewing, cross-country skiing, snowmobiling, ATV use, horseback riding, boating, fishing and hunting. The Recreation Opportunity Spectrum (ROS) is generally semi-primitive, including both motorized and non-motorized categories. There are no designated recreation sites within *the Dunlevy Plan* area.

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[12] One Animal Unit Month is defined in the *Range Act* and its regulations as the amount of forage required to sustain an average animal (e.g., 450 kg) in the genus *Bos*, aged 6 months or older, for a period of one month (30 days).

The public presently recreates within the Dunlevy Creek SMZ, with Aylard Ridge being a focal point.

The Dunlevy Creek SMZ also forms part of the Tourism Opportunity Study (TOS)[13] currently underway by the B.C. Ministry of Small Business Tourism and Culture within the Dawson Creek Forest District.
The *Hudson's Hope Tourism Develop Review* (Dunlevy Creek SMZ Information Report, Appendix 4) identifies several recreation and tourism opportunities associated with *the Dunlevy Plan* area.

Commercial Recreation

There are no commercial recreation tenures within the Dunlevy SMZ at present. However, there are two proposals pending approval. Commercial recreation is defined as outdoor recreational activities undertaken on a fee-for-service basis, with a focus on experiences associated with the natural environment. The policy for managing commercial recreation on Crown land flows from the *Land Act*.

Commercial recreation on Crown land is administered by British Columbia Assets and Land Corporation (BCAL), having been delegated to BCAL from the Ministry of Environment, Lands & Parks in October 1998. The program is consistent with the commercial recreation goals and objectives of the Dawson Creek LRMP.

Visual Quality

The scenic areas within the Wildlife Habitat/Wilderness Recreation RMZ are values considered essential and linked to wilderness, commercial and other recreation values. Rocky Mountain viewscapes are common in the RMZ; many of these are adjacent to protected areas. Some of the areas within this RMZ are visually sensitive. However, most of *the Dunlevy Plan* area is not currently impacted by industrial developments.

Scenic areas exist along the north shore of Williston Lake where outdoor recreation activities are known to occur. Visual sensitivity ratings, as viewed from Williston Lake and the W.A.C. Bennett viewpoints, range from low to high. The LRMP indicates that additional scenic areas may be identified.

Within *the Dunlevy Plan* area, established visual quality objectives (VQO's) range from modification to retention. Canfor's recent re-inventory of visual resources[14] may result in the establishment of revised VQO's for the area.

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[13] The TOS examines both commercial and non commercial recreation opportunities
[14] As per TFL 48, Rationale for Allowable Annual Cut Determination, 2001. Visual resources re-inventory is consistent with Resource Inventory Committee standards.

3. RECOMMENDATIONS

Introduction

The following section provides recommendations for access for forestry and oil and gas activities within the Dunlevy Creek SMZ. Ancillary recommendations are also offered for Recreation and Tourism. Implementation recommendations are further included.

Existing legislation and regulations will take precedence over recommendations in *the Dunlevy Plan*. Where recommendations are in conflict with legislation and regulations, the legal authority will prevail. Some of the more pertinent provincial legislation and regulations for *the Dunlevy Plan* are described in Dunlevy Creek SMZ Information Report, Appendix 1. Although not discussed in *the Dunlevy Plan*, industrial activities must also comply with federal legislation—a subject that is beyond the scope of this Plan.

Two fundamental recommendations for the Dunlevy Creek SMZ are intended to integrate resource planning and development in a manner that is consistent with the Dawson Creek LRMP. These superseding recommendations are intended to facilitate the communication of stakeholders' interests in integrated resource management planning processes.

1. Resource development activities will be coordinated among tenured users, where possible.
2. Resource developments will be planned in consultation with interested stakeholders[15]. To address site-specific concerns, industrial proponents/operators are recommended to undertake on-site viewing with concerned stakeholders, where applicable.

Open discussion, pre-planning, and consultation (preferably on-site) among tenured users and user groups will facilitate socially acceptable and environmentally sound development of resource opportunities associated with *the Dunlevy Plan* area.

[15] Stakeholders are defined by the regulatory agency's consultation process.

ACCESS RECOMMENDATIONS

Access direction must be taken from the Dawson Creek LRMP. It states that *the way or means of approach to a specific interest is collectively referred to as access*. Access for resource development is an acceptable use of the land outside of Protected Areas. Sensitive Access Management direction should be utilized in areas of significant resource value in order to conserve their values over time. This information will be used by land and resource managers within established regulatory review processes.

Access within *the Dunlevy Plan* area will be guided by designated primary access routes (Figure 6). Designated access routes within *the Dunlevy Plan* area are designed to prevent access through the SMZ and to control the direction of access. Designated access corridors correspond with existing access restrictions for wildlife management units 735 (Dunlevy) and 736 (Adams/Aylard).

Designated access routes can be constructed to allow for all-season use. However, portions of designated access routes will require some level of deactivation and/or rehabilitation to inhibit uncontrolled access while still providing the opportunity for reactivation to accommodate contingency needs. Secondary access routes will be constructed as temporary, low impact roads (recognizing the preference is for winter construction and use, where applicable), since these require little or no deactivation; discrete portions may still require rehabilitation to inhibit uncontrolled access[16].

Coordination of access routes between industrial users is a high priority. Similarly, coordination of deactivation schedules among industrial users is recommended, and may warrant the *transfer* of road use/maintenance liability on development roads, particularly in situations where road maintenance agreements have not been negotiated between users. For example, when an industrial user approaches a permit holder planning to deactivate a road, and requests the permit holder to defer deactivation for an indefinite period, the permit obligations may be terminated by the appropriate regulatory authority, and a new permit may be issued to the future user[17]. Requests by non-industrial users to defer deactivation are considered by the appropriate regulatory authority through discussions with the permit holder; the statutory decision-maker may assume the liability to address non-industrial interests. Deactivation[18] of designated access routes that are no longer required can include recontouring and re-vegetation with native species; discrete portions may require rehabilitation to control erosion and access. Access control measures may be required to restrict access, to minimize or eliminate traffic not related to industrial activity.

Given that the Graham South road system represents the designated access route for developing the Adams and Aylard drainages (Figure 6), roads in the Adams and Aylard will not be tied into the existing roads in the Dunlevy. All designated access routes within the Adams and Aylard will

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[16] Winter roads are defined as being constructed and used during the period from November 1st through March 31st under frozen conditions and/or on a substrate of packed snow. Any sidecuts required due to topography will be required to recontour as close to original condition as possible. Backslopes on all cuts are required to be constructed on a 2:1 slope. Low impact roads are defined as having minimal deactivation requirements since their construction involves minimal alteration of the surficial hydrology. They are substantially self-sustaining; and pose a low erosion hazard.

[17] The issuance of a well authority infers access for well-site development.

[18] Deactivation requirements are described in the *Forest Practices Code of B.C. Act's* Forest Road Regulation (FRR) Part 5.

be deactivated upon completion of silviculture obligations. In addition to the current ATV restrictions, this deactivation will restrict access between harvest entries to "non-highway" vehicles.

Designated access routes will be designed with the objective of providing future access control to highway vehicles. Any portions of deactivated roads not considered "self-sustaining" by the appropriate regulatory agency will require rehabilitation of the unstable portions, in accordance with legislation and regulations. Portions of deactivated roads may require rehabilitation / restoration measures along specified portions to further control access. Similarly, bridges and culverts that are not expected to be "self-sustaining" will be removed at deactivation.

Guidelines

1. All access closures will be accompanied by appropriate signage, public education and notification (responsibility will depend on the legislated authority for access closure).
2. Develop and implement a public awareness program to address access management recommendations (Municipality of Hudson's Hope to coordinate with MSRM; IAMC, forest district, WLAP, BCAL and OGC to support implementation).
3. Where public demand for access is anticipated, post information signs at points of closure for road and vehicle restrictions. A motor vehicle restriction sign to be placed at the trail head behind the existing CNRL wellsite near the hanging moss gardens (WLAP to undertake)
4. Recommend legislated access management to manage public motorized access including snowmobiles and all terrain vehicles (*intent: government to undertake/implement*). Existing motorized routes will be designated under the access management plan.

   Legislated access management is required to manage public motorized access including snowmobiles and ATV's (i.e., under an Access Management Area). Existing motorized routes will be recognized as designated access in the Access Management Area.
5. Recommend that an access management strategy, which may include an Access Management Area, be established with the objective of managing access to sustain wildlife and social (i.e., wilderness recreation) values[19] with special consideration of the future values of the municipality of Hudson's Hope (MSRM Regional Director, in consultation with Peace Managers, to provide direction on this strategy, IAMC to support interagency participation)
6. During periods of operations (industrial use), all new access routes will be managed to prevent an increase in public motorized use through the use of access control measures that could include gates[20], signage, operator monitoring at access control points, etc.
7. Access management and control are fundamental to achieving the objectives of *the Dunlevy Plan*. Primary access routes[21] must adhere to the designated access corridors identified *in the Dunlevy Plan* (Figure 6), with secondary roads defined as roads extending from these designated access corridors. Regulating agencies include MoF and OGC. Primary access

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[19] *The Forest Practices Code of B.C. Act's* Forest Road regulation (section 3(1)(a) identifies a role for higher level plans in the management of access, specifically, in guiding the selection and optimum location of roads.

[20] The Dawson Creek LRMP (section 5.7.7) recommends the use of access control measures other than gates, where feasible. When gates are chosen as the tool to control access, it must be advertised with sufficient time for public concerns to be addressed. Additional recommendations for signage, reasons for closure, and the authority for closure are also noted (pp. 149-150).

[21] Primary access route locations are permanent, but the use is for the period of activity identified in an approved development plan and/or road/road use permit.

routes will be designed with the objective of managing access to maintain predevelopment levels of public motorized access as defined in the Dawson Creek LRMP (p. 168).

8. Coordination of proposed access and deactivation schedules among industrial users is encouraged. Designated primary access routes must be deactivated, and designated portions rehabilitated/restored, as much as is practicable with recognition that future forestry and oil and gas use will be scheduled again (regulating agencies include MoF, MEM and OGC). *Refer also to item 24.*

9. Once designated primary access routes are deactivated, or designated portions are rehabilitated, ATV, snowmobile or aerial methods (e.g., helicopter) are encouraged for monitoring and any subsequent obligations (MoF and OGC to consider when reviewing access development proposals; regulating agencies include MoF and OGC).

10. Secondary access routes will be constructed as temporary, low impact roads, recognizing the preference is for winter construction and use, where applicable. Construction and use of winter secondary roads, with the exception of deactivation, is restricted to occur between November 1st and March 31st. For harvesting operations, the restriction applies to hauling; it is recognized that deactivation may occur outside this window[22].

11. Consideration should be given to using a non-linear design for access routes on flat terrain, and to rehabilitating line-of-sight access (MoF and OGC to consider when reviewing access development proposals)

12. To access oil and gas resources underlying the low elevation, ungulate winter range within the Williston zone and the high elevation ungulate winter range within the Butler zone (Figure 8), where roaded access and surface activity are prohibited, industrial proponents are required to directional drill from adjacent areas where opportunities for roaded access exist (*see also Wildlife Habitat Recommendations*). For production purposes, authorization for access can be applied for to the regional wildlife manager (*refer to Access Recommendations, item 20.1*).

13. To access oil and gas resources underlying the high elevation ungulate winter range within the Aylard zone (Figure 8), roaded access for exploration is prohibited (*refer also to Access Recommendations, item 20.1*). The width of this zone does not preclude directional drilling from adjacent areas where opportunities for roaded access exist.

14. Within one kilometre of the low elevation, ungulate winter range (Williston zone), sheep, caribou and elk are particularly sensitive to any disturbance during the lambing/calving season from April 30th to July 15th (Figure 6). Industrial extraction and/or construction activities are allowed within this one kilometre zone from July 15th to April 30th. However, during the lambing/calving season, mitigative measures to reduce impacts from disturbance must be applied for through the appropriate regulatory agency.

15. Helicopter access to/within areas identified as ungulate winter range is restricted to occur between July 15th and November 30th. The intent of this recommendation is to avoid the potential for wildlife harassment. Therefore, avoid local flights over ungulate winter between December 1st and April 1st.

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[22] Winter roads are defined as being constructed and used during the period from November 1st through March 31st under frozen conditions and/or on a substrate of packed snow. Any sidecuts required due to topography will be required to recontour as close to original condition as possible. Backslopes on all cuts are required to be constructed on a 2:1 slope. Low impact roads are defined as having minimal deactivation requirements since their construction involves minimal alteration of the surficial hydrology. They are substantially self-sustaining; and pose a low erosion hazard.

16. Allow temporary access with an objective of controlling public motorized access within the Non-permanent Development zone (Figure 8). Roads will be constructed to the minimum standard required so that less of a scar on the land results (*see also Wildlife Habitat Recommendations*).

17. Prevent the creation of public motorized access from Williston Lake to designated access corridors (i.e., through the Williston and/or the Non-permanent Development zones, Figure 8).

18. Do not preclude the motorized use of existing known trails within the low-elevation ungulate winter range (Williston and Non-permanent Development zones, Figure 8).

19. Prohibit the development of new public motorized access in the low-elevation ungulate winter range (e.g., no trail cutting for motorized use) (Williston and Non-Permanent Development zones, Figure 8).

20. Maintain the current levels of access management restrictions within the *Dunlevy Plan* area, as designated under the *Wildlife Act* (WLAP administers):

    20.1. The use of motor vehicles is prohibited within the entire plan area above 1400 metres in elevation. Where industrial access is required within the motor vehicle prohibition area (>1400m elevation) to support the production of a well or in support of a pipeline, an application to authorize this access can be made to the regional wildlife manager. Applications for permit are required pursuant to and in accordance with the *Wildlife Act* and the regulations[23]. The use of snowmobiles (< 450 kilograms in weight) is permitted between November 1 and April 30.

    20.2. In the area east of Aylard Creek and west of Dunlevy Creek, no use of ATV's (including snowmobiles and motorcycles) for the purpose of hunting, or to transport hunters, hunting supplies, wildlife or firearms to or from the location of wildlife.

    20.3. For the remainder of *the Dunlevy Plan* area there is no use of ATV's (including snowmobiles and motorcycles) for the purpose of hunting, or to transport hunters, hunting supplies, wildlife or firearms to or from the location of wildlife between the hours of:

    - 4:30 am to 8:00 am from Aug. 15 to Aug. 30
    - 5:30 am to 9:00 am from Sept. 1 to Sept. 30
    - 6:30 am to 10:00 am from Oct. 1 to Oct. 31

21. Revise temporally-specific motor vehicle restrictions for hunting to designated access routes through the Hunting Regulations, as provided under the *Wildlife Act* (section 108) (WLAP to undertake)

22. To alleviate public access pressures in sensitive wildlife habitat areas, develop recreational opportunities including, but notwithstanding, interpretive trails, recreational trails, and

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[23] Section 19 of the *Wildlife Act* authorizes a regional manager to permit activities that are prohibited in this Act, or to omit activities required by this Act or the regulations, subject to and in accordance with those conditions, limits and period or periods the regional manager may set out in the permit, and despite anything contained in this Act or the regulations. The regional manager may issue a permit in accordance with the Permit Regulation (BC Regulation 253/2000) on the terms and for the period he/she specifies, exempting a person from any provisions of the Motor Vehicle Prohibition Regulation (BC Regulation 196/99). Before issuing a permit, the regional manager must be satisfied that the applicant meets the specific requirements, if any, for the permit as set out in this regulation, and that issuing the permit is not contrary to the proper management of wildlife resources in British Columbia.

wildlife viewing sites in areas where public access can be monitored and administered at a local level (Municipality of Hudson's Hope to coordinate with MSRM; IAMC, forest district, WLAP, Municipality of Hudson's Hope, BCAL and OGC to support implementation)

23. In consultation with interested stakeholders, plan for the development of recreational trails, recognizing the intent to sustain predevelopment access densities in the long-term
24. Industrial users are required to establish road use agreements with the road permit holder to ensure that active industrial users are recognized and kept informed of operational schedules, and that access schedules are coordinated among users.
25. Access for resource development activities will be coordinated among industrial users with the intent to avoid duplicate access routes (MoF and OGC to consider when reviewing access development proposals).
26. Industrial access will be regulated to ensure that road development, maintenance, and deactivation/rehabilitation activities are consistent with the *Dunlevy Creek Management Plan* (regulating agencies include MoF and OGC).
27. On primary access routes, all industrial crossings of fish streams must use bottomless structures (i.e., clear span bridge or arch culvert) to ensure there is no alteration of in-stream fish habitat (Department of Fisheries and Oceans (DFO) to evaluate when reviewing access development proposals)[24].
28. For temporary access routes, where corrugated metal pipes (CMP's) are used to cross fish streams, the CMP must be installed in a manner that maintains fish passage. These crossings must be monitored and maintained to ensure fish passage is maintained for the full life of the crossing.
29. The streams within *the Dunlevy Plan* area support both spring spawners (Rainbow trout, Arctic Grayling) and fall spawners (Bull trout, kokanee and mountain whitefish). The in-stream time window is restricted to July 15 to August 15 for all fish bearing streams and all direct tributaries to fish bearing streams (MoF, WLAP and OGC to evaluate timing of operations when reviewing access development proposals; regulating agencies include MoF, WLAP and OGC).

[24] As per direction from Department of Fisheries & Oceans.

FORESTRY RECOMMENDATIONS

The following recommendations for forestry provide guidance for addressing several specific issues. Some of these issues relate to forest practices that may be appropriate to address in a higher level plan for the Dunlevy Creek SMZ[25]. However, as an alternative to establishing specific forest practices in a higher level plan (especially where there is uncertainty, and administrative constraints), the Technical Team recommends the following forest practices for achieving the objectives contained in *the Dunlevy Plan*. These recommended forest practices, although not a higher level plan, will be considered by the district manager (or adopted by the district manager as policy) when approving operational plans.

Strategic Forestry Recommendations

1. Plan forest development through harvesting that mimics the natural disturbance regime and landscape ecology.
2. Where ecologically appropriate and economically feasible, practice silviculture systems other than clearcutting
3. Prescriptions must be consistent with the natural disturbance frequency and scale, optimizing stand windfirmness, visual quality, recreation, and wildlife values
4. To facilitate wildlife migration and enhance wildlife habitat values associated with early seral forest, orient harvest openings / patches to achieve connectivity at a landscape level
5. Use a mix of commercial species to regenerate forests at the stand level while maintaining the balance of forest types (i.e., coniferous, deciduous, and mixedwood types) at the landscape level
6. Post-harvest stocking densities may require variance at the standards unit level from the Establishment to Free Growing Guidelines (EFGG) to accommodate recreational and/or wildlife habitat use within a silviculture opening. The impact of decreased stocking densities on timber supply within the TFL must be within the acceptable level of timber supply impact associated with biodiversity (i.e., for old growth management areas, wildlife tree reserves)
7. In specified areas with high seasonal wildlife use, cluster- or obstacle-plant commercial conifer species using target densities that exceed 1200 stems per hectare within harvested strips and/or patches (avoid conventional grid planting). A non-conventional planting design and a clustered survey methodology are indicated. The impact of cluster- or obstacle-planting is not intended to exceed the acceptable level of timber supply impact associated with biodiversity.

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[25] Forest practices that may be appropriate to address in a higher level plan are noted in the *Forest Practices Code of B.C. Act's* Operational Planning Regulation – require that a forest development plan of a period longer than 5 years is to be prepared – OPR s.14(1); specify areas where timber harvesting or other forest development activities are postponed for a period of time – OPR s.1; establish visual quality objectives based on physical characteristics and social concern for the area – OPR s.1; guide the determination of silvicultural systems and stand structure – OPR s.56(b) and (c); specify cutblock design, including cutblock size, shape and pattern – OPR s.21(1) and (2); specify requirements for species composition – OPR s.52(1) and (2), s.57(a)(ii).

8. Enhance thermal cover for ungulates by allowing higher planting densities in specific areas. Since higher planting densities have the potential of reducing conifer sawlog quality, access may be required for incremental silviculture activities (e.g., commercial thinning).

9. Notwithstanding item 10, stand conversion may be considered a feasible option where repeated silvicultural investments to an opening, or portion thereof, have occurred and associated regeneration failures have been demonstrated. Ecological conditions must be appropriate for the conversion, and the balance of forest types (i.e., coniferous, deciduous, and mixedwood types) must be maintained at the landscape level.

10. Manage mixedwood forests to ensure that the balance of forest types (i.e., coniferous and deciduous land bases) is maintained at the landscape level

11. Recognize natural succession in the regeneration of seral species, particularly in areas previously burned by wildfire, where the current inventory information indicates low site productivity. Where feasible, increase the productivity of the operable forest land base.

12. Use wildlife tree reserves, old growth management areas, and wildlife habitat areas to protect habitat features such as licks, bluffs, raptor nests, riparian habitat, etc.

13. When using silviculture systems such as clearcut or clearcut with reserves, design irregular harvest openings with shape indices greater than 1.6[26] (Patton 1975*)*

14. To mitigate visual sensitivity that could result from forest development using even-aged reproduction methods[27] within visually sensitive areas, encourage the development of forested buffers that meet visual green-up requirements.

15. Where ecologically suitable within harvested openings, accept/encourage natural regeneration of pioneer species (including aspen and lodgepole pine) to augment thermal cover and wildlife forage, while maintaining the balance of forest types (i.e., coniferous, deciduous, and mixedwood types) at the landscape level

16. Use native species (when available) in grass/legume seed mixes for rapid ground cover establishment on in-block roads and rehabilitated portions of roads.

17. In addition to rehabilitating temporary roads, to inhibit uncontrolled public motorized access, promote the development of non-commercial brush species, plant high densities (e.g., >1200 stems per hectare) of commercial conifer species and/or encourage high densities of natural deciduous regeneration at designated access control points.

18. To guide wildlife movement through early seral (juvenile) stands while reducing wildlife browse and associated damage to commercial regeneration on silviculture openings, reduce stand densities along identified wildlife corridors (e.g., create a gradation of stand densities through juvenile spacing to channel wildlife movement)[28].

19. Recognize higher visual quality values closer to Williston Lake (i.e., along the Front Range), and lower visual quality values further from the lake. (*The intent of this recommendation is*

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[26] Shape index is calculated using the formula: SI = P/[(2*sqrt (pi) * sqrt (A*10 000)] where SI is shape index, P is the perimeter of the opening, A is its area (ha). As a reference, a circle has a shape index of 1.0. Increasing irregularity in shape increases the shape index.

[27] High forest methods include reproduction methods in which regeneration is established from seed, and include clearcutting, seed-tree, and shelterwood methods that produce even-aged stands.

[28] The creation of wildlife migration corridors using juvenile spacing has been demonstrated as an effective means of channelling ungulates through juvenile and thrifty stands within the UBC Research Forest to minimize wildlife impacts on silviculture investments.

to qualify the social values with respect to the visual resources north of Williston Lake, not to prescribe visual quality objectives, or how to achieve them).

20. At designated locations, create or enhance existing scenic viewpoints or wildlife viewing areas through timber harvesting where ecologically appropriate. Future timber harvesting opportunities will not be unduly or substantively constrained by new scenic areas created through timber harvesting.

21. Work toward limiting the use of herbicides, with a long-term objective of eliminating their use within the Plan area. Where possible, use alternatives to herbicides. (*The intent of this recommendation is to use silvicultural methods that may include planting immediately following harvest using large stock-types, or superior stock-types from genetically improved seed (when available), increasing or decreasing stocking densities on portions of openings, etc.*).

RECOMMENDED FORESTRY PLAN

General to Dunlevy SMZ

The *Dunlevy Plan* area consists of three drainages, Adams Creek, Aylard Creek and Dunlevy/Dresser Creeks. Adams and Aylard Creeks are entirely contained within the *Dunlevy Plan* area. The majority of the Dunlevy and Dresser Creeks are contained within the *Dunlevy Plan* area, except for the portions that are contained within Butler Ridge Park. The Park portion is excluded from the *Dunlevy Plan* area and this forestry plan. The *Dunlevy Plan* area and Butler Ridge Park are contained in and form part of the Dunlevy Landscape Unit.

The following forestry plan is subject to periodic review, every 10 years. Should a catastrophic event (fire, windthrow, disease or insect epidemic) occur, the forestry plan can be revised. It is further understood that should a catastrophic event occur elsewhere within TFL 48 or the Dawson Creek TSA that requires immediate attention, the timing of activities within the *Dunlevy Plan* area may be delayed.

For the purpose of the forestry plan, the *Dunlevy Plan* area is divided into five compartments (Figure 6). These compartments consist of:

- Compartment #1 – Adams
- Compartment #2 – Aylard
- Compartment #3 – Dunlevy
- Compartment #4 – Upper Dunlevy
- Compartment #5 – Dresser

For each compartment, the following sections describe area summary statistics, general forestry values, and forestry recommendations for access management, harvesting, silviculture, and temporal development. Table 1 lists the proposed harvesting schedule and harvest areas associated with each compartment over a period of 150 years.

With respect to harvesting, the percent area available for harvest is calculated for a clearcut silviculture system. Should selection, patchcut or shelterwood silviculture systems be employed, the harvest area will be based on what the volume would be if the area were clearcut. For example, the volume available on a 30% clearcut area of 300 hectares would be used as the target volume that could be removed using silviculture systems other than clearcutting; the clearcut area of 300 hectares does not represent a fixed block area for other silviculture systems.

COMPARTMENT # 1 – ADAMS

Total Area = 6745 hectares; Forested Area = 6472 hectares, Non-Forest Area = 273 hectares
Timber Harvesting Land Base (2001): Conifer = 3621 ha, Deciduous = 0 ha.
Non-Contributing Forest = 2851 hectares

General

To date, no harvesting or road building has occurred within this unit. The area is dominated by mature and old seral coniferous forest. The front ranges tend to have more mature deciduous than conifer. A proposed Winter Ungulate Range covers the south facing slopes along the north edge of Williston Lake.

Access Management Plan

Primary access will be from the South Graham Forest Service Road in the Fort St John District. This road presently has access restrictions in place. However, the authority for enforcing ATV and public motorized vehicle restrictions on new access routes within the *Dunlevy Plan area* has not yet been established, and must be determined. The approximate location of the primary route is shown in Figure 6. This route will be used for primary access throughout the unit. Access that is created from the primary route will be considered temporary.

1. The primary route will be considered as a permanent access corridor. It can be constructed to an all weather status. The intent is to construct to the minimum required standard while respecting safety and the environment.
2. After completion of primary silviculture activities[29], all access will be deactivated to a state that is intended to prevent public motorized access. The intent is to have this as a non-motorized corridor during periods of inactivity thereby excluding ATV's and snowmobiles (except for industrial users). The intent is to prevent new public motorized access including snowmachines and ATV's.
3. Deactivation can include the removal of bridges, culverts, re-contouring of selected portions and seeding to prevent erosion. The intent is to leave the route in a self-sustaining state for the period until next entry.
4. Temporary routes will be identified at the Forest Development Plan stage. These routes can be used for the period during which primary silviculture activities are completed. Upon completion, the portions contained within cutblocks will be rehabilitated and included in the net area to be reforested. Portions that are contained outside of cutblocks will be permanently deactivated and re-vegetated, to allow for reconstruction at the next entry.

Harvesting

1. Harvesting will be done on a "three pass" system. Up to 35% of the timber harvesting land base may be available for harvest during first pass. Harvesting will be restricted to one side of Adams Creek, if sufficient volume, then the upper right fork would not contribute, on the first pass.
2. Second pass will be limited to a maximum of 20 % and third pass to a maximum of 25%

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[29] *Primary silviculture activities* consist of three steps
1) Initial planting in first planting season following harvest
2) Regeneration survey in the second year following planting
3) Fill Planting (if necessary) in the third year

removal. Second pass can come from either side of Adams Creek, with third pass coming from the remainder.

3. Harvest areas will leave sufficient patches for biodiversity purposes, such as Wildlife Tree Reserves, Riparian Reserves and the protection of resource features.
4. Cover[30] will be retained at a distance not exceeding 500 meters apart.
5. Visual quality objectives will apply on the front ranges along Williston Lake. For the remainder of the valley, the District Manager will consider meeting visual quality objectives through cut block design that avoids straight lines, and provides for features such as interior leave patches and rehabilitation of temporary access structures.
6. Harvesting can occur within the area of the Ungulate Winter Range, but will be subject to joint Ministry of Forests (MoF) and WLAP approval. The intent is to conduct harvesting for improvements to the winter range.
7. Block boundaries, silviculture systems and harvest methods will be determined at the Forest Development Plan stage.

Silviculture

1. All conifer harvest areas will be regenerated by planting to reduce the amount of time road access is required.
2. Each group of harvest areas will average no greater than two years from harvest to primary planting, on an area weighted average.
3. Up to 10% of the harvest area may be prescribed for reduced or no silviculture obligations, to meet specified wildlife habitat needs.
4. Up to 10% of the area may be left with no need to space down to the prescribed stocking standards, to meet future thermal cover for wildlife.
5. Due to presence of wild sheep, no domestic sheep grazing is permitted (refer to current MELP policy).

Timing

1. For road construction and harvesting, the initial entry will be in the five year period between 2004 to 2009,or 2009 to 2014, or 2020 to 2029, depending upon the coordination with the Graham River Access Plan. If these three time periods are all permissible under the Graham Plan, then initial entry will occur in the latest time frame that coincides with available access in the Graham Plan. The year 2020 is the preferred starting point. However, the intent is that the initial entry in this compartment will occur only after initial entries and silviculture activities in the Lower Dunlevy and the Upper Dunlevy have been completed and access rehabilitated/deactivated.
2. Second entry will occur in a five-year period between 2070 and 2079, with third pass occurring between 2100 and 2110.
3. The intent is to complete harvesting in the shortest time frame that is reasonable in order to minimize impacts to wildlife and other values.
4. Season of harvest may be determined at the Forest Development Plan stage

[30] Cover is defined as forest that provides visual screening, and implicitly includes structure for biodiversity.

COMPARTMENT # 2 – AYLARD

Total Area = 5313 hectares, Forested Area = 4755 hectares, Non-Forest Area = 558 hectares
Timber Harvesting Land Base (2001) - Conifer = 2174 ha., Deciduous = 87 ha.
Non-Contributing Forest = 2494 hectares

General

To date, no harvesting has occurred within this unit. A "cat" trail was constructed as a fireguard in the 1970's, and extends from the Dunlevy Road to the mouth of Aylard Creek (presently used by all terrain vehicles). No forest roads have been constructed within this unit. The area is dominated by early and young coniferous forest, with patches of mature and old coniferous forest. The front ranges have a component of deciduous forest, of all seral classes. Proposed Winter Ungulate Range covers the south facing slopes along the north edge of Williston Lake and also portions of the west facing slopes of Twenty Mile Ridge.

Access Management Plan

Primary access will be from the South Graham Forest Service Road in the Fort St John District. This road presently has access restrictions in place. The approximate location of the primary route is shown in Figure 6. This route will be used for primary access throughout the unit. Access that is created from the primary route will be considered temporary.

1. The primary route will be considered as a permanent access corridor. It can be constructed to an all weather status. The intent is to construct to the minimum required standard while respecting safety and the environment.
2. After completion of primary silviculture activities[31], all access will be deactivated to a state that is intended to prevent public motorized access. The intent is to have this as a non-motorized corridor during periods of inactivity thereby excluding ATV's and snowmobiles (except for industrial users).
3. Deactivation can include the removal of bridges, culverts, re-contouring of selected portions and seeding to prevent erosion. The intent is to leave the route in a self-sustaining state for the period until next entry.
4. Temporary routes will be identified at the Forest Development Plan stage. These routes can be used for the period during which primary silviculture activities are completed. Upon completion, the portions contained within cutblocks will be rehabilitated and included in the net area to be reforested. Portions that are contained outside of cutblocks will be permanently deactivated and re-vegetated, to allow for reconstruction at the next entry.

Harvesting

1. Harvesting will be done on a "three pass" system. Up to 20% of the timber harvesting land base may be available for harvest during the first pass. Harvesting can be conducted on both sides of Aylard Creek, but no blocks shall be opposite each other, on each pass.
2. Second and third pass will be limited to a maximum of 30% each.
3. Harvest areas will leave sufficient patches for biodiversity purposes, such as Wildlife Tree

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[31] *Primary silviculture activities* consist of three steps
1. Initial planting in first planting season following harvest
2. Regeneration survey in the second year following planting
3. Fill Planting (if necessary) in the third year

Reserves, Riparian Reserves and the protection of resource features.
4. Cover[32] will be retained at no greater distance than 500 meters apart.
5. Visual quality objectives will apply on the front ranges along Williston Lake. For the remainder of the valley, the District Manager will consider meeting visual quality objectives through cut block design that avoids straight lines, and provides for features such as interior leave patches and rehabilitation of temporary access structures.
6. Harvesting can occur within the area of the Ungulate Winter Ranges, but will be subject to joint MoF and WLAP approval. . The intent is to conduct harvesting only where required for wildlife management purposes.
7. Block boundaries, silviculture systems and harvest methods will be determined at the Forest Development Plan stage.

Silviculture

1. All conifer harvest areas will be regenerated by planting to reduce the amount of time road access is required.
2. Each group of harvest areas will average no greater than two years from harvest to primary planting, on an area weighted average.
3. Up to 10% of the harvest area may be prescribed for reduced or no silviculture obligations, to meet specified wildlife habitat needs.
4. Up to 10% of the area may be left with no need to space down to the prescribed stocking standards, to meet future thermal cover for wildlife.
5. Due to presence of wild sheep, no domestic sheep grazing is permitted (refer to current MELP policy).
6. Use of mix of commercial species to regenerate forests at the stand level while maintaining the balance of forest types (i.e., coniferous, deciduous, and mixedwood types) at the landscape level
7. Minimize delay to regeneration establishment on the deciduous land base by encouraging natural regeneration of commercial deciduous species within 2 years of harvesting disturbance

Timing

1. For road construction and harvesting, the initial entry will be in the period of 2050 to 2060.
2. Second entry will occur in a five-year period between 2120 and 2130, with third pass entry occurring between 2140 and 2150.
3. The intent is to complete harvesting in the shortest time frame that is reasonable to minimize impact on wildlife and other values.
4. Season of harvest may be determined at the Forest Development Plan stage.

COMPARTMENT # 3 – LOWER DUNLEVY

Total Area = 10 126 hectares; Forested Area = 9340 hectares, Non-Forest Area = 785 hectares
Timber Harvesting Land Base (2001) – Conifer = 5006 ha, Deciduous = 1373 ha.
Non-Contributing Forest = 2961 hectares

[32] Cover is defined as forest that provides visual screening, and implicitly includes structure for biodiversity.

General

To date, one cut block has been harvested (1984/85) in this unit. An all weather road (namely, Dunlevy Road) runs from Dunlevy Creek to a gas well located in the centre of the compartment. Numerous old "cat" trails were constructed across the southern portion of the compartment for gas and mineral exploration, and fire fighting. A permanent access road has been constructed to one of the seven cutblocks approved for harvesting. This compartment contains all seral stages of both coniferous and deciduous forest. A proposed Winter Ungulate Range covers the south facing slopes along the north edge of Williston Lake. A resource feature ("hanging moss gardens") is located near the wellsite, on the south end of Twenty Mile Ridge.

Access Management Plan

All weather road exists as the Dunlevy Road. This road will be maintained as a permanent access route with no access restrictions, other than for environmental purposes. Should the road permit holder (presently Canfor) wish, this road may either be deactivated to reduce maintenance costs, or the road permit transferred to another permittee. However, the intention is that existing public motorized access on this road will be maintained and continued in the future. (OGC/DM to determine).

1. A primary access route is shown on Figure 6. This route can be constructed to an all weather status. During periods when this road is not in use, a barrier will be constructed at the junction of this road and the Dunlevy Forest Road, with the intent of preventing public motorized access.
2. After completion of primary silviculture activities[33], all access, except the Dunlevy Road will be deactivated to a state that prevents public motorised access. The intent is to have this as a non-motorized corridor during periods of inactivity that excludes ATV's and snowmachines (except for industrial users)
3. Deactivation can include bridge and culvert removal, re-contouring of selected portions and seeding to prevent erosion.
4. A barrier will be constructed near the start of this road, to prevent highway vehicle access.
5. During periods of operations (industrial use), all access will be managed to prevent an increase in public motorized access.

Temporary routes to harvest areas will be identified at the Forest Development Plan stage. These routes can be used for the period until primary silviculture activities are completed. Upon completion of these activities, these routes will be deactivated to a self-sustaining state. Portions that are contained outside of cutblocks will be permanently deactivated and re-vegetated, to allow for re-construction at the next entry. Portions that are within cutblocks and considered as temporary access structures (Forest Practices Code definition) will be rehabilitated and included in the net area to be reforested. Portions that are to be used for future access, or are unsuitable for reforestation, will be deactivated to a self-sustaining state.

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[33] *Primary silviculture activities* consist of three steps

1. Initial planting in first planting season following harvest
2. Regeneration survey in the second year following planting
3. Fill Planting (if necessary) in the third year

Harvesting

1. Harvesting will be done on a "multiple pass" system.
2. Up to 5% of the timber harvesting landbase may be available for harvest within the first five-year period and each of the next three entries.
3. Entries five, six and seven will be up to a maximum of 10% of the timber harvesting land base.
4. Entries eight and nine will be up to 15% of the timber harvesting landbase.
5. Harvesting will be disbursed throughout the unit, with a range of cut block sizes, with no clearcut harvest block (including clearcut with reserves) exceeding 100 hectares.
6. The average clearcut block size over a twenty-year period will be less than 30 hectares.
7. Harvest areas will leave sufficient patches for biodiversity purposes, such as Wildlife Tree Patches, Riparian Reserves and for the protection of resource features.
8. Cover[34] will be retained at no greater distance than 500 meters apart.
9. Harvesting can occur within the area of the Ungulate Winter Range, but will be subject to joint MoF and WLAP approval. The intent is to conduct harvesting where required for wildlife management purposes.
10. Block boundaries, silviculture systems and harvest methods will be determined at the Forest Development Plan stage.

Silviculture

1. All conifer harvest areas will be regenerated by planting to reduce the amount of time road access is required.
2. Each group of harvest areas will average no greater than two years from harvest to primary planting, on an area weighted average.
3. Up to 10% of the harvest area may be prescribed for reduced or no silviculture obligations, to meet specified wildlife needs.
4. Up to 10% of the area may be left with no need to space down to the prescribed stocking standards, to meet future thermal cover for wildlife.
5. Due to the presence of wild sheep, no domestic sheep grazing is permitted cite MELP standards.
6. Use of mix of commercial species to regenerate forests at the stand level while maintaining the balance of forest types (i.e., coniferous, deciduous, and mixedwood types) at the landscape level
7. Minimize delay to regeneration establishment on the deciduous land base by encouraging natural regeneration of commercial deciduous species within 2 years of harvesting disturbance

Timing

1. For road construction and harvesting, the initial entry will be in the period 2000 to 2005.
2. The second entry will be in the period 2010 to 2020.
3. The third entry will be in the period 2030 to 2040.
4. The fourth entry will be in the period 2050 to 2060.
5. The fifth entry will be in the period 2060 to 2070.
6. The sixth entry will be in the period 2080 to 2090.
7. The seventh entry will be in the period 2100 to 2110.

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[34] Cover is defined as forest that provides visual screening, and implicitly includes structure for biodiversity.

8. The eighth entry will be in the period 2110 to 2120.
9. The ninth entry will be in the period 2130 to 2140.
10. The intent is to complete harvesting in the shortest time frame that is reasonable.
11. Season of harvest may be determined at the Forest Development Plan stage.

COMPARTMENT # 4 – UPPER DUNLEVY

Total Area = 3462 hectares: Forested Area = 3164 hectares, Non-Forest Area = 297 hectares
Timber Harvesting Land Base (2001) – Conifer = 1891 ha, Deciduous = 0 ha.
Non-Contributing Forest = 1273 hectares

General

To date, no harvesting has occurred in this unit. A permanent all weather road (access to gas well) crosses the northeast tip of the area. The area is predominately mature and old seral stage coniferous forest.

Access Management Plan

Primary access will be via the Kobes Creek FSR and Husky Oil Road in the Fort St John District. A portion of the Husky Oil Road is within this unit. This road can be maintained as a permanent all weather road. The approximate primary route is shown on the map in Figure 6. This route will be used for primary access throughout the unit. Access that is created from the primary route will be considered temporary.

1. The primary route will be considered a permanent access corridor. It can be constructed to an all weather status. The intent is to construct to the minimum standard required for safety and environmental standards.
2. During periods of inactivity, a barrier will be constructed near the forest district boundary to prevent the creation of public motorized access on the route.
3. After completion of primary silviculture activities[35], this route will be deactivated to a state that prevents public motorised access. The intent is to have this as a non-motorized corridor during periods of inactivity that excludes ATV's and snowmachines
4. Deactivation can include the removal of bridges, culverts, re-contouring of selected portions and seeding to prevent erosion. The intent is to leave the route in a self-sustaining state for the period until next entry.
5. Temporary routes will be identified at the Forest Development Plan stage. These routes can be used for the period until primary silviculture activities are completed. Upon completion, the portions contained within cutblocks will be rehabilitated and included in the net area to be reforested. Portions that are contained outside of cutblocks will be permanently deactivated and re-vegetated, to allow for re-construction at the next entry.

Harvesting

1. Harvesting will be done on a "three pass" system.

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[35] *Primary silviculture activities* consist of three steps
1. Initial planting in first planting season following harvest
2. Regeneration survey in the second year following planting
3. Fill Planting (if necessary) in the third year

2. Up to 25% of the timber harvesting land base may be available for harvest during first pass.
3. Up to 25% of the timber harvesting land base may be available for harvest during second pass.
4. Up to 30% of the timber harvesting land base may be available for harvest during second pass.
5. Harvest areas will leave sufficient patches for biodiversity purposes, such as Wildlife Tree Patches, Riparian Reserves and for the protection of resource features.
6. Cover[36] will be retained at no greater distance than 500 meters apart.
7. Block boundaries, silviculture systems and harvest methods will be determined at the Forest Development Plan stage.

Silviculture

1. All conifer harvest areas will be regenerated by planting to reduce the amount of time road access is required.
2. Each group of harvest areas will average no greater than two years from harvest to primary planting on an area weighted average.
3. Up to 10% of the harvest area may be prescribed for reduced or no silviculture obligations, to meet specified wildlife needs.
4. Up to 10% of the area may be left with no need to space down to the prescribed stocking standards, to meet future thermal cover for wildlife.
5. Due to the presence of wild sheep, no domestic sheep grazing is permitted. Cite MELP policy

Timing

1. For road construction and harvesting, the initial entry will occur in the period 2005 to 2015.
2. Second pas will occur in the period 2040 to 2050.
3. Third pass will occur in the period 2150 to 2160.
4. The intent is to complete harvesting in the shortest time frame that is reasonable.
5. Season of harvest may be determined at the Forest Development Plan stage.

COMPARTMENT # 5 – DRESSER

Total Area = 10 474 hectares; Forested Area = 9636 hectares, Non-Forest Area = 838 hectares
Timber Harvesting Land Base (2001) – Conifer = 1994 ha, Deciduous = 710 ha.
Non-Contributing Forest = 6932

General

To date, no harvesting has occurred in this unit. An all weather road (Dunlevy Forest Road) crosses the extreme southwest tip of the unit. Numerous "cat" trails occur throughout the unit. These were primarily constructed for fire fighting purposes. The area is predominately covered by early seral deciduous and mixed wood forest, with areas of mature and old conifer and deciduous forest along the southwest border of Butler Ridge Park and north edge of the RMZ. A Winter Ungulate Range is proposed for a portion of the west slope of Butler Ridge, adjacent to the Park. An Outfitters cabin (land lease) is located near Dunlevy Creek, along the western boundary of this unit.

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[36] Cover is defined as forest that provides visual screening, and implicitly includes structure for biodiversity.

Access Management Plan

Primary access will be via the Kobes Creek FSR in the Fort St John District. The approximate primary route is shown on the map in Figure 6. This route will be used for primary access throughout the unit. Access that is created from the primary route will be considered temporary. No access will be created from the Dunlevy Forest Road to the Kobes Creek FSR.

1. The primary route will be considered a permanent access corridor. It can be constructed to minimum status required for safety and environmental purposes.
2. During periods of inactivity, a barrier will be constructed near the forest district boundary to prevent highway vehicle traffic from travelling the route.
3. After completion of primary silviculture activities, this route will be deactivated to a state that prevents public motorized access. The intent is to have this as a non-motorized corridor during periods of inactivity that excludes ATV's and snowmachines
4. Deactivation can include the removal of bridges, culverts, re-contouring of selected portions and seeding to prevent erosion.
5. The intent is to leave the route in a self-sustaining state for the period until next entry.
6. Temporary routes will be identified at the Forest Development Plan stage. These routes can be used for the period until primary silviculture activities[37] are completed. Upon completion, the portions contained within cutblocks will be rehabilitated and included in the net area to be reforested. Portions that are contained outside of cutblocks will be permanently deactivated and re-vegetated, to allow for re-construction at the next entry.

Harvesting

1. Harvesting will be done on a "two pass" system. Up to 40% of the timber harvesting landbase may be available for harvest within a five-year period.
2. Leave areas will be left that are at least an equivalent size as the clear-cut areas.
3. Harvest areas will leave sufficient patches for biodiversity purposes, such as Wildlife Tree Patches, Riparian Reserves and for the protection of resource features.
4. Cover[38] will be retained at no greater distance than 500 meters apart.
5. Harvesting can occur within the area of the Ungulate Winter Range, but will be subject to joint MoF and WLAP approval. The intent is to conduct harvesting where required for wildlife management purposes only.
6. Block boundaries, silviculture systems and harvest methods will be determined at the Forest Development Plan stage.

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[37] *Primary silviculture activities* consist of three steps
   1. Initial planting in first planting season following harvest
   2. Regeneration survey in the second year following planting
   3. Fill Planting (if necessary) in the third year

[38] Cover is defined as forest that provides visual screening, and implicitly includes structure for biodiversity.

Silviculture

1. All conifer harvest areas will be regenerated by planting to reduce the amount of time road access is required.
2. Each group of harvest areas will average no greater than two years from harvest to primary planting, on an area weighted average.
3. Up to 10% of the harvest area may be prescribed for reduced or no silviculture obligations, to meet specified wildlife needs.
4. Up to 10% of the area may be left with no need to space down to the prescribed stocking standards, to meet future thermal cover for wildlife.
5. Due to the presence of wild sheep, no domestic sheep grazing is permitted. Cite MELP guidelines
6. Use of mix of commercial species to regenerate forests at the stand level while maintaining the balance of forest types (i.e., coniferous, deciduous, and mixedwood types) at the landscape level
7. Minimize delay to regeneration establishment on the deciduous land base by encouraging natural regeneration of commercial deciduous species within 2 years of harvesting disturbance

Timing

1. For road construction and harvesting, the initial entry will be in the period 2060 to 2070.
2. Second entry will occur during the period 2130 to 2140.
3. The intent is to complete harvesting in the shortest time frame that is reasonable to minimize impacts to wildlife and other values.
4. Season of harvest may be determined at the Forest Development Plan stage.

Table 1

Area (ha) proposed for forest development, by decade, within the *Dunlevy Plan* area

Compartment / Year	2000	2010	2020	2030	2040	2050	2060	2070	2080	2090	2100	2110	2120	2130	2140	2150	Total
ADAMS	0	0	1250	0	0	0	0	725	0	0	900	0	0	0	0	0	2875
AYLARD	0	0	0	0	0	450							680		680		1810
LOWER DUNLEVY	320	320		320		320	640		640		640	950		950			5100
UPPER DUNLEVY		475			475											560	1510
DRESSER							1350							1350			2700
TOTAL	**320**	**795**	**1250**	**320**	**475**	**770**	**1990**	**725**	**640**	**0**	**1540**	**950**	**680**	**2300**	**680**	**560**	**13995**

Area based on % of 2001 THLB

OIL AND GAS RECOMMENDATIONS

The purpose of this subsection is to provide management recommendations specific to guide oil and gas exploration and development within *the Dunlevy Plan* area. In addition, oil and gas operations are expected to comply with recommendations listed in the *Wildlife Habitat Recommendations* section. Appendix 3 contains further detail on the operational guidelines for oil and gas activities. Specific guidelines will be applied according to the activities concerned, as determined by the Oil and Gas Commission, and proponents/operators will be required to comply with these guidelines. While specific operational techniques are identified in Appendix 3, proponents/operators are encouraged to develop techniques that will reduce or eliminate environmental impacts.

In *Resource Values and Uses* (section 3), unique, localized, site-specific features are described including research reserves. Surface activities from oil and gas operations will avoid these features as per the *Forest Practices Code of B.C. Act* and regulations. Geophysical surveys will avoid the reserves; and drilling operations and related surface facilities will not be permitted within the boundaries of the reserve areas.

To access oil and gas resources underlying ungulate winter ranges where roaded access and surface activity are prohibited (Williston and Butler zones), industrial proponents are required to directional drill from adjacent areas where opportunities for roaded access exist.

To access oil and gas resources underlying ungulate winter ranges that occur above an elevation of 1400m (Aylard zone), roaded access is prohibited (*refer also to Access Recommendations, item 20.1).* Industrial access may be required within the motor vehicle prohibition area (>1400m elevation) to support the production of a well or in support of a pipeline. Applications for permit are required pursuant to and in accordance with the *Wildlife Act* and the regulations. Proponents are expected to provide a rationale in their applications for permit describing why road construction is required within the motor vehicle prohibition area. Before issuing a permit, the regional manager must be satisfied that the applicant meets the specific requirements, if any, for the permit as set out in the regulation, and that issuing the permit is not contrary to the proper management of wildlife resources in British Columbia.

General Guidelines

1. Proponents must coordinate their plans and activities with other operators to the greatest degree practical to reduce area impacts. This might involve pooling efforts and resources, use of common roads, pipeline and utility right-of-ways, and general infrastructure.
2. Development plans[39] must be submitted to the Oil and Gas Commission after consulting with other companies and tenure holders operating within *the Dunlevy Plan* area.
3. At the end of each phase of development, updated plans for deactivation and rehabilitation of roads and trails must be incorporated into the development plan.
4. At each stage of development, a proponent is required to provide the best estimate of the overall extent of development to ensure that the scope and potential impacts of the proposed total development are clearly understood and identified.

Geophysical Operations

[39] Development plan requirements are described in Appendix 3.

1. Unless conclusively demonstrated (*i.e., to the Oil and Gas Commission*) that conventional seismic exploration will not cause significant harm to environmental values, geophysical operations will be heli-portable only, particularly in areas with potentially unstable slopes and/or high wildlife habitat values[40], avoiding standing timber, and using avoidance methods, as per Workers' Compensation Board regulations. Heli-portable techniques shall consist of minimal removal of vegetation and conform to all legislation, while limiting the line of site within the program area (i.e., GPS[41] or similar survey techniques are preferred, with a meandering method of line construction).
2. Geophysical operations within critical ungulate winter range are restricted to occur between July 15th and November 30th.
3. Minimize surface disturbance and negative impacts through coordination of seismic programs and related disturbances wherever possible.
4. A reclamation plan shall be in place for each geophysical program, and must be submitted to the Oil and Gas Commission prior to construction commencement. The reclamation plan must include:
   - 4.1 Methods to repair blowouts within 24 hours.
   - 4.2 Methods to immediately plug any flowing holes encountered.
   - 4.3 Methods of removal of all garbage and any other visible signs of operation.
   - 4.4 Methods of reclamation and/or erosion control on any areas where duff disturbance has occurred.
   - 4.5 Methods to restrict motorized vehicle access to any point of line intersecting existing access.
   - 4.6 Methods to ensure the timber is bucked to lie flat on the ground, and to prevent detrimental insect propagation.
5. Potential heli-pad location(s) should be situated in areas of lower value forest and must avoid high value wildlife habitat (e.g., licks, wallows). All heli-pads must be constructed to comply with safety and operational requirements.

Exploratory Oil and Gas Wells

1. Directional drilling is the preferred method to access reserves underlying critical ungulate winter range. Directional drilling must be considered where technically feasible, in lieu of further road development or critical habitat alteration (Figures 5, 6 and 8 include critical ungulate winter range areas within *the Dunlevy Plan* area)
2. The use of extended reach directional drilling and multi-well pads is recommended, where possible.
3. Remote sumps and sumpless systems are to be used wherever possible. The perimeter of each wellsite may require fencing. Where sumps are used, sumps/tailing ponds will remain fenced until reclamation activities commence. The intent of this recommendation is to locate sumps/sumpless systems away from critical wildlife habitat areas.

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[40] Cited from Dawson Creek Land and Resource Management Plan (p. 92). Note that the OGC retains statutory authority for decisions on regulatory functions.
[41] Global Positioning System (GPS) technology is recommended for obtaining spatially explicit locations.

4. Minimize surface disturbance on lease sites through the use of snowfill, ice accumulations, geotextile, and/or swampmats, where possible.

5. Follow best management practices to reduce well emissions, both from well flaring and fugitive well emissions, to minimize negative impacts on air quality and forest productivity

6. Coalbed methane wells will be restricted to one lease every 65 hectares (equivalent to one lease every hundred and sixty acres); one wellsite per lease, can use multi-reach technology.

Reclamation guidelines are outlined in Appendix 3.

Roads/Access

1. Access control measures will be required to minimize or eliminate the development of public motorized access that could result from oil and gas exploration and development activities.

2. Roaded access for exploratory wells will be limited to temporary, winter-use roads only. Exceptional circumstances may warrant change and specific approval must be sought from the regulatory agency (e.g., refer also to *Plan Amendment and Variance* section). Designated access routes can be constructed to allow for all-season use while secondary access will be constructed as temporary, low impact roads only. Deactivation and/or reclamation activities must consider future access needs (also refer to Appendix 3).

3. Industrial motorized traffic on temporary, winter roads is restricted to the period between November 1st and March 31st, with the exception of deactivation. No vehicular equipment is to be moved on or after March 31st without an extension authorized by the OGC.

4. Long, direct line-of-sight situations must be avoided.

Reclamation guidelines are outlined in Appendix 3.

Production[42]

1. Remote monitoring of wellsites is required where technically feasible[43] (*the intent of this recommendation is not to keep roads open only for monitoring*)

2. Proponents to consider alternatives to overhead power lines.

3. Proponents must locate processing plants and waste processing facilities outside of *the Dunlevy Plan* area; and where technically feasible, locate production facilities outside of the *Dunlevy Plan area*[44]. Proponents shall identify options for locating production facilities with consideration of environmental, social and economic values.

4. Pipeline routes will consider ecological as well as economic values, and will be assessed on a site-specific basis. The proponent will be required to produce an impact assessment describing possible alternative routes.

5. Proposals for wellsites located within the high elevation, ungulate winter range of Aylard Ridge must include pipeline options that minimize impacts to alpine habitat. Industrial access may be required within the motor vehicle prohibition area (>1400m elevation) to support the production of a well or in support of a pipeline. Applications for permit are required pursuant to and in accordance with the *Wildlife Act* and the regulations (*refer also to Access Recommendations, item 20.1*).

6. Pipeline proposals will make every effort to avoid alpine areas. Where alpine areas cannot be avoided, pipeline proposals must be designed and placed in a manner that utilizes a single, approved corridor, minimizes damage to sensitive alpine habitat, and is designed to accommodate wildlife (ungulate) movement. Construction activities that include the use of motor vehicles in alpine areas (>1400m elevation) will require an application for permit pursuant to and in accordance with the *Wildlife Act (refer also the Access Recommendations, item 20.1).*

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[42] ***Processing plant***: means a plant for the extraction from gas of hydrogen sulfide, carbon dioxide, helium ethane, natural gas liquids or other substances but does not include a production facility.
Production facility: means a battery, oil treater, pumping station, compressor station, dehydrator, gas injection station, line heater, waste disposal facility, waste processing facility, water disposal facility, water injection station or, on designation of an authorized commission employee, any other system of vessels and equipment designed to accommodate production or disposal, or both production and disposal, of well effluent products and byproducts, but does not include a gas processing plant.

[43] ***Remote monitoring*** is only possible on producing wells as they are being monitored for pressure and flow. A shut in well needs to be checked once a year or once every 3 years (depending on what method was used to shut it in). This may be done using unroaded methods.

[44] There are currently no facilities in the plan area. In the Altares, Farrell Creek, Kobes, and Federal there are a number of small dehydrator units and gas tie-ins to the UPRI Graham gathering system (compressor station) which is then sent out to Westcoast facilities.

New Oil and Gas Tenures

All proposed oil and gas tenures within *the Dunlevy Plan* area will have the following caveat included in the *Notice of Public Tender* for oil and gas rights competitions:

> *Tenure #____ is located within the boundaries of the Dunlevy Creek Management Plan. In accordance with the Wildlife Act and the regulations, area-specific access and wellsite restrictions will apply. Further access and wellsite restrictions may apply to meet the objectives of the plan. Tenure holders are expected to follow the spirit and intent of the plan.*

There are existing oil and gas tenures located within the Dunlevy SMZ. Existing tenure holders will be expected to follow the spirit and intent of *the Dunlevy Creek Management Plan*.

WILDLIFE HABITAT RECOMMENDATIONS

1. The Dunlevy Creek Management Plan recommends that B.C.'s Chief Forester and the Deputy Minister of Water, Land and Air Protection declare, by written order, an area of land along the front ranges north of Williston Lake as *ungulate winter range*. This area is necessary for the winter survival of several ungulate species (refer to *Wildlife Resources*).

2. *The Dunlevy Plan* recommends that objectives for the management of the *ungulate winter range* are established[45] to ensure the continued protection of key habitat values (e.g., maintenance of low elevation, early seral, deciduous-leading mixedwood forests occupying south-facing exposures, adjacent to riparian habitat).

3. Once declared, *the Dunlevy Plan* recommends that WLAP authorize an area closure for the *ungulate winter range* under the *Wildlife Act* (section 109) to prohibit the use of any motor vehicles within the defined area for the protection and/or management of wildlife resources. These measures will also serve to restrict traffic from either Williston Lake or the Dunlevy Road through Adams or Aylard drainages to Meadow Creek.

4. Low-elevation multi-species ungulate winter range occurs along the north shore of Williston Lake. Within this zone, the area west of Aylard Creek includes both critical sheep winter range and lambing areas, and all season ungulate use; the area east of Adams Creek is documented as critical elk winter range. In addition to supporting critical wildlife habitat, the area is characterized by unstable terrain, and visual quality objectives that range from retention to partial retention. To access oil and gas resources underlying this low elevation, ungulate winter range where roaded access and surface activity are prohibited (Williston zone), industrial proponents are required to directional drill from adjacent areas where opportunities for roaded access exist.

5. Mid-elevation sheep habitat occurs on the western side of Butler and Aylard Ridges. Surface activities from oil and gas exploration and development are required to minimize impacts on these sites.

6. High-elevation caribou and sheep winter range occurs above an elevation of 1400 metres in alpine and sub-alpine habitats. A motor vehicle closure exists in this area. Roaded access is not permitted on this winter range area. To explore for oil and gas resources underlying high elevation ungulate winter range that occurs above an elevation of 1400m along Aylard Ridge (Aylard zone), roaded access is prohibited (*refer also to Access Recommendations, item 20.1).*

7. To access oil and gas resources underlying high elevation, ungulate winter ranges where roaded access and surface activity are prohibited (Butler zone), allow for directional drilling from adjacent areas where opportunities for roaded access exist (i.e., directional drill from adjacent areas below 1400m).

8. Within one kilometre of the low elevation, ungulate winter range (Williston zone), sheep, caribou and elk are particularly sensitive to any disturbance during the lambing/calving season from April 30th to July 15th (Figure 6). Industrial extraction and/or construction activities are allowed within this one kilometre zone from July 15th to April 30th. However, during the lambing/calving season, mitigative measures to reduce impacts from disturbance must be applied for through the appropriate regulatory agency.

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[45] *The Forest Practices Code of B.C. Act's* Operational Planning Regulation (OPR) section 69 provides for the establishment of *ungulate winter range* and objectives by the Chief Forester and Deputy Minister of Environment Lands and Parks.

9. Helicopter access to/within areas identified as ungulate winter range is restricted to occur between July 15th and November 30th. The intent of this recommendation is to avoid the potential for wildlife harassment. Therefore, avoid local flights over ungulate winter between December 1st and April 1st.

10. The Dunlevy Creek lowlands supports moose and elk winter range. Fisheries values are high in this area, with spawning grounds for Rainbow trout and introduced Kokanee. Surface activities from industrial development are required to minimize impacts on these winter ranges and fisheries values.

11. Recommendations pertaining to low-elevation ungulate winter range (refer to Figure 8[46])

    11.1. The Williston zone will be managed for UWR and unstable terrain. To the north of the Williston zone, a secondary zone is depicted (herein referred to as the Non-permanent Development zone). The Non-permanent Development zone allows for temporary access with an objective of controlling public motorized access. Roads will be constructed to the minimum standard required so that less of a scar on the land results. Both the Williston zone and the non-permanent development zone comprise the collective low-elevation UWR.

    11.2. Directional drill to access oil and gas reserves underlying the Williston zone; allow temporary access for industrial development (oil and gas, and/or forestry) within the Non-permanent Development zone

    11.3. UWR objectives to provide for maintenance of wildlife habitat in the Williston zone through prescribed burning; and in the Non-permanent Development zone, through harvesting.

    11.4. Prevent the creation of public motorized access from Williston Lake to designated access corridors (i.e., through the Williston zone and/or the Non-permanent Development zone).

    11.5. Do not preclude the motorized use of existing known trails within this collective UWR.

    11.6. Prohibit the development of new public motorized access in this collective UWR (e.g., no trail cutting for motorized use).

12. Mineral licks are of special importance in the *Plan area*. All activities should be conducted in a manner that maintains the functional integrity of licks and their associated animal approach corridors.

[46] The timber harvesting land base (THLB) is not static—it is subject to the current assumptions and best information sources used in the current timber supply review process. These assumptions and information sources may change in subsequent timber supply reviews.

Table 2. Access Zoning Schedule for Oil and Gas Activities within the *Dunlevy Plan* area

Oil & Gas Activities	Williston Zone Low Elevation UWR	Non-Permanent Development Zone	1 km buffer on Low Elevation UWR	Butler Zone High Elevation UWR	Aylard Zone High Elevation UWR	Mid-Elevation UWR
Geophysical						
➢ Conventional*	Not permitted	Permitted*	July 15 - April 30	Not permitted	Not permitted	Avoid, see p. 38
➢ Heli-portable	July 15 - Nov. 30	Preferred alternative	July 15 - April 30	July 15 - Nov. 30	July 15 - Nov. 30	July 15 - Nov. 30
Access						
➢ Conventional	Not permitted	Permitted*	July 15 - April 30	Not permitted	Not permitted	Avoid, see p. 38
➢ Temporary winter road	Not permitted	Nov. 1 – Mar. 31	Nov. 1 – Mar. 31	Not permitted	Not permitted	Avoid, see p. 38
➢ Ice/snow road	Not permitted	Nov. 1 – Mar. 31	Nov. 1 – Mar. 31	Not permitted	Not permitted	Not applicable
➢ In-stream work in fish streams	Not permitted	July 15 – Aug. 15	July 15 – Aug. 15	Not permitted	Not permitted	July 15 - Aug. 15
Drilling						
➢ Conventional	Not permitted **	Permitted*	July 15 - April 30	Not permitted **	Not permitted **	Avoid, see p. 38
➢ Unroaded	Not permitted	Preferred alternative	July 15 – April 30	Not permitted	July 15 - Nov. 30	Not applicable
Pipelines						
➢ Conventional	Not permitted	Permitted*	July 15 – April 30	Not permitted	See conditions p. 37	Avoid, see p. 38
➢ Unroaded	Not permitted	Preferred alternative	July 15 – April 30	Not permitted	See conditions p. 37	Not applicable

* *only suitable where demonstrated to not harm unstable slopes and/or high wildlife values (see pg. 34)*

** *directional drilling from outside of zone, no wellsites permitted in this zone*

4. OUTSTANDING ISSUES

Throughout the Dunlevy Creek planning process, the need to spatially and temporally coordinate and manage access for oil and gas and forestry activities in the Dunlevy Creek SMZ has been identified as the primary outstanding issue. Some members of the Planning Team recommend that the concept of coordinated access be binding on other resource users as well. Finding the acceptable balance between industry's need for access, the public's wants, and appropriate access restrictions to conserve wildlife habitat and wilderness recreation values has been the crux of this issue.

The Planning Team has been informed that long-term deferral of oil/gas activity is considered by government to be inconsistent with the DC LRMP, as per Mr. David Johns' letter of May 10, 2001 (Appendix 2). Many members of the Planning Team are of the opinion that roaded access required by oil and gas exploration and development activities should be coordinated with forestry activities in a temporal sense (i.e., $\pm$10 years). This does not mean deferral of oil and gas activity, as many members of the Planning Team feel that unroaded exploration and development methods such as directional drilling or helicopter-transported drilling technology are appropriate for use in time periods where forestry activity is not planned. The Planning Team has also been informed that until alternative access methods are proven to be feasible in all cases, government will not commit to broad strategies on alternative access methods (refer to Mr. David Johns' letter of July 11, 2001).

Appendix 2 contains Mr. David Johns' (ADM LUCO) response to the Planning Team's request for deferral of oil and gas exploration and development (May 10, 2001). It also contains letters submitted by Planning Team members that concern temporal coordination of industrial access. Finally, David Johns' response to the Planning Team concerning non-roaded access methods for oil and gas activities (July 11, 2001) is included.

Notwithstanding government's direction, some members of the Planning Team have continued to express concern regarding the need to coordinate resource development activities in the Dunlevy Creek SMZ. The following paragraphs describe a proposed compromise that some members of the Planning Team encourage government to consider. Inclusion of this proposal in the Dunlevy Creek Management Plan does not imply that government supports it as an approved objective or strategy; it is recognized as an outstanding issue *for some Planning Team members*.

Proposed Compromise

Some members of the Planning Team recommend that oil/gas activities adhere to the timelines for the construction of roaded access included in the forestry recommendations when considering the construction of permanent or non-permanent roaded access. Outside of these timelines, oil/gas activities are required to utilize unroaded access methods. The proposed compromise is that in order for an exception to be made to this requirement, proponents must demonstrate that no technically feasible option exists for the use of non-roaded access methods. This approach would allow for roaded access but shifts the onus to the proponents to prove that unroaded methods are not a feasible means of conserving the wildlife habitat/wilderness recreation values.

In addition, some members of the Planning Team recommend that government *"doesn't open the flood gates"* for oil and gas exploration and development before the outcome of the heli-portable drilling study is available. The Technical Team interprets this to indicate that these Planning Team members would like to see few, if any, tenures sold before the study is completed.

As new information becomes available and new technologies are proven, this plan must be adapted. This applies to the determination of the technical feasibility of heli-portable drilling technology, which will be guided by the technical study now being coordinated by the Oil and Gas Commission and Muskwa-Kechika Board. It is understood that in some cases, unroaded access methods may be more costly than traditional roaded access methods. However, the intention is not to place an unreasonable burden on oil/gas operators in this SMZ.

Some members of the Planning Team recommend that caveats in all future tenure sales must reflect that the heli-portable drilling study may find that this technology is feasible for use in this area. If so, proponents will be guided by the outcomes and results of the study, including any recommendation that may be suggested.

Comments submitted by Planning Team members on their respective plan endorsement forms are summarized in Appendix 4.

5. IMPLEMENTATION

To ensure that resource values are recognized and incorporated in operational and landscape level planning processes, stakeholders and First Nations are responsible for identifying historical access routes and specific resource values/features to the Technical Team. Technical Team representatives will append the information to the approved plan. Stakeholders and First Nations are responsible for informing the Technical Team, in a timely manner, of any new information that becomes available regarding specific resource values/features. The responsibility for obtaining spatially explicit locations[47] of the identified routes and/or specific values/features will be directed to the industrial proponents who are planning operational activities within the respective area.

Monitoring and Reporting

MSRM's planning section will coordinate monitoring to ensure the approved plan is implemented as intended. MSRM will review monitoring information with respect to implementation recommendations, and will report the results through the annual Dawson Creek LRMP Implementation meeting. The Graham Committee Chair will also be invited to participate in this review.

Monitoring of Harvesting Performance

For the period of active timber harvesting, harvesting performance will be monitored and reported annually by forest licensees; MoF district staff will serve as auditors, and forward summaries of monitoring results to MSRM's planning section. Indicators such as gross cutblock size, net area to be reforested, commercial species harvested, stand age, volumes harvested and volumes retained, cutblock shape index, length and width of forestry roads constructed / deactivated / rehabilitated are recommended for monitoring. Windthrow / salvage needs, regeneration success/failure, wildlife utilization, and recreation impacts are further recommended for monitoring harvesting performance.

To ensure that the schedule and intensity of harvesting follow the intent of *the Dunlevy Plan*, an acceptable level of variance in either the volume and/or area harvested each year will be used to monitor harvesting performance. In consultation with all forest tenure holders and the MoF, MSRM will assist in identifying the monitoring criteria. The actual timing of the harvesting and the volumes harvested are of secondary importance to the long-term management of access.

Rehabilitation Performance on Oil & Gas Developments

Long-term monitoring is required to ensure that rehabilitation measures are successful and erosion from disturbance is controlled. In the late spring or early summer in the first year after seeding, the proponent will undertake an assessment, in consultation with the OGC, to determine the need for subsequent treatment to improve establishment (e.g., the application of fertilizer). Maintenance/monitoring is required until the respective areas have been successfully rehabilitated with native species (where possible), and erosion potential is equal to or less than that of the surrounding undisturbed areas.

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[47] Global Positioning System (GPS) technology is recommended for obtaining spatially explicit locations.

FURTHER IMPLEMENTATION RECOMMENDATIONS

Recreation and Tourism

Collectively, the recommendations cited in the *Hudson's Hope Tourism Development Review* indicate the need for a recreation plan specific to the area, a subject that is beyond the scope of *the Dunlevy Plan* as agreed to in the *Terms of Reference*. However, recommendations in *the Dunlevy Plan* should form the basis for further planning processes concerning this subzone. These, in turn, must follow the spirit and intent of the Dawson Creek LRMP (e.g., are consistent with its access management objectives). The intent of access management within the Wildlife Habitat/Wilderness Recreation RMZ is to manage towards sustaining predevelopment access densities in the long-term (p. 93). As an objective, the LRMP further notes that pre-existing recreational routes and levels of access are maintained (p. 94).

1. Initiate the planning process to develop a recreation plan specific to *the Dunlevy Plan* area (MoF, MSRM and BCAL to initiate with stakeholder participation)
2. consider options for investment and/or reinvestment by commercial, industrial, and public users to enhance resource values within *the Dunlevy Plan* area

Commercial Recreation

The need for a recreation plan that encompasses commercial recreation for the *Dunlevy Plan* area is indicated. This subject is beyond the scope of the *Dunlevy Plan* as agreed to in the *Terms of Reference*. Even so, recommendations in *the Dunlevy Plan* should form the basis for further planning processes concerning this area. These, in turn, must follow the spirit and intent of the Dawson Creek LRMP (e.g., are consistent with its access management objectives).

Some recommendations that should be considered in the development of a recreation plan for the *Dunlevy Plan* area include:

1. As a condition of future commercial recreation tenure disposition, *the Dunlevy Plan* recommends that commercial recreation proponents be required to plan and coordinate resource developments with industrial tenure holders where possible.
2. *The Dunlevy Plan* recommends that proponents be required to consult with interested stakeholders and First Nations when planning resource development. Proponents/operators are recommended to undertake on-site consultation with interested stakeholders and First Nations.
3. Limit recreation facilities to those required for signage, sanitary and safety needs using natural, rustic materials where possible.

Resource Feature Protection

The Dunlevy Creek Management Plan recommends that a Land Act notation be established immediately to protect the identified resource feature referred to as the hanging moss gardens. The notation area will require validation through on-site assessment by BCAL, with GPS coordinates of the feature; and will encompass an area that includes a visual buffer distance not less than 50m from the feature's perimeter. *The Dunlevy Creek Management Plan* also recommends that the District Manager of Forests make this a known resource feature under the *Forest Practices Code of BC Act*.

Silvicultural Use of Herbicides

The Dunlevy Creek Management Plan recommends that the ministries of Forests, and Water Land and Air Protection, or the appropriate agency, investigate alternatives to herbicide use in the *Plan area* with the objective of limiting herbicide use in the short term, and eliminating its use in the long term. Where possible, use alternatives to herbicides.

GOVERNMENT TRANSITION

With the creation of the new ministries on July 3, 2001, namely Sustainable Resource Management (MSRM), and Water Land and Air Protection (WLAP), some of the responsibilities and implementation tasks identified in the recommendations for MoF and MELP will be transferred. A list of general responsibilities for each ministry is noted below.

MSRM Responsibilities		
➢ Tenure registries	➢ Crown land policy	➢ Protected areas strategy
➢ Survey, mapping and data base management	➢ Resource inventory	➢ Archaeology
➢ Environmental assessment project impact analysis	➢ Land and water use planning and zoning	➢ Water allocation and licensing
➢ Land titles	➢ Water rights	➢ Major Crown right of ways
➢ Land Use Coordination Office	➢ Aboriginal land resources	➢ Heritage rivers
➢ BC Assets and Land Corporation	➢ Major Boards and Commissions	➢ BC Assessment Authority
➢ Environmental Assessment Board	➢ Land Reserve Commission	➢ Fraser Basin Management Council
➢ Muskwa-Kechika Advisory Board	➢ Environmental Assessment Office	➢ BC Heritage Rivers Board
WLAP Responsibilities		
➢ Green Economy Initiative	➢ Air, land and water pollution control	➢ Fish and wildlife habitat and species protection
➢ Recreational fish and wildlife management	➢ Environmental emergencies	➢ Parks, recreation and protected areas
➢ Wildlife branch	➢ Flood plain management	➢ Major Boards and Commissions
➢ Environmental Appeal Board	➢ Creston Valley Authority	➢ Habitat Conservation Trust
MoF Responsibilities		
➢ Reforestation	➢ Pest control	➢ Fire protection
➢ Range land	➢ Forest research	➢ Forest Practices Code
➢ Tenure administration	➢ Timber pricing	➢ Annual allowable cut
➢ Value added development	➢ Forestry Small Business Program	➢ Major Boards and Commissions
➢ Forest Appeals Commission	➢ Forest Practices Board	➢ Forest Renewal BC
➢ Forests management	➢ Harvest management	

6. PLAN AMENDMENT AND VARIANCE

In British Columbia, many government decisions require a balancing of environmental, economic and social values. In implementing the *Dunlevy Plan*, there may be a range of proposed projects that have different costs and social impacts. An important issue for public confidence is the inclusion of superior wildlife habitat and recreation outcomes in these proposals. The nature of the proposals will determine whether an amendment or a variance is required.

A variance allows a project in a defined area to proceed under specified terms and conditions, by providing relief from specific elements of the *Dunlevy Creek Management Plan* that would otherwise prevent the project from proceeding (i.e., the project is site-specific). Alternatively, an amendment changes *the Dunlevy Plan* permanently for all potential projects, and typically would apply throughout the whole plan area.

While the intent of *the Dunlevy Plan* will remain constant, the means for achieving the desired outcomes may require amendments to *the Dunlevy Plan*. Similarly, as new information becomes available, it will be considered by MSRM and may be incorporated through a plan amendment.

The following section summarizes the principles associated with, and process for conducting a plan variance. The amendment process is subsequently described.

VARIANCE

Operational guidelines are intended to achieve *the Dunlevy Plan's* objectives of allowing resource development while protecting identified values, based on current information and understanding. However, site-specific situations may occur where the guidelines recommended in *the Dunlevy Plan* may be inappropriate, or where there is an alternative method to achieve the objective.

The following principles and process will guide decisions on whether to allow a variance to the Dunlevy Creek Management Plan. ***At present, this process pertains only to oil and gas development proposals.***

Principles

1. A proponent may propose a variance to the *Dunlevy Plan* through the appropriate government agency responsible for the resource in question: The OGC will address variance proposals concerning oil and gas-related projects while MoF will address those concerning forestry-related projects. The respective agency will refer the proposal to other relevant agencies for review and comment. A proponent must clearly specify how the proposed variance differs from the *Dunlevy Plan*. A proposed variance must also be supported by a rationale.
2. A variance leaves the *Dunlevy Plan* unchanged in all other respects. Each proposal will be judged on its own merits. The proponent must respond to concerns raised during the referral process, describing how those concerns will be addressed. This information will be considered by the relevant decision-maker in adjudicating the variance application (i.e., OGC for oil and gas proposals, MoF for forestry proposals).
3. Each proposal will be judged for its consistency with the LRMP, and considered in the context of any local strategic plans that affect the *Dunlevy Plan* area.

4. The relevant decision-maker will grant a variance if the proponents demonstrate that the proposal:

   4.1. Is acceptable for the environmental, social and economic values and conforms to the objectives and strategies, spirit and intent of all applicable plans and legislation, and;

   4.2. Has clearly superior environmental outcomes compared to the best project alternative that accesses the same resource and has the best environmental, social, and economic outcome. Both the variance proposal and the best project alternative must be deemed viable by the relevant decision-maker for environmental, social and economic reasons.

5. Proponents will develop variance proposals at their own cost. This includes creating and/or assembling the ecological information needed to show clear environmental, social and economic advantages of their proposal.

6. The relevant decision-maker, in consultation with government agencies (potentially including the federal Department of Fisheries and Oceans), will assess the impact of all oil and gas and related forestry developments in the area for which the variance is proposed, and may include conditions for the specific variance based on the details of the proposal.

7. The agency approving the variance will advise MSRM of variance decisions in a rationale statement. This information will be summarized and reported at the annual Dawson Creek LRMP Implementation meeting.

Process

1. The OGC will address variance proposals concerning oil and gas-related projects; MoF will address those concerning forestry-related projects. The respective agencies will direct the public consultation on variance proposals and any subsequent consultation required for a project that is granted a variance. Consultation will be documented and forwarded to MSRM.

   Recommendations concerning consultation and advertisement are presently under review by MSRM. Once confirmed, these recommendations will be considered for incorporation into the *Dunlevy Plan*.

2. A proponent prepares the project proposal in an area that they feel requires a variance to the *Dunlevy Plan*. The proponent submits their proposal to the relevant agency, which in turn refers the proposal to other directly affected government agencies for review and comment. The proponent will include an analysis of how the proposal:

   2.1. has clearly superior environmental outcomes compared to the best project alternative that accesses the same resource and has the best environmental, social and economic outcome. Both the variance proposal and the best project alternative must be deemed viable by the relevant agency for environmental, social, and economic reasons;

   2.2. does not significantly diminish the resource values of any specific zone objectives for which a variance is requested;

   2.3. addresses the results of the proponent's public consultation program.

3. The information provided by the proponent will include, as a minimum, the following:

   3.1. Description of the project that the proponent believes is consistent with the *Dunlevy Plan* with sufficient details to assess the predicted environmental impact of the project.

   3.2. Description of the project proposed for a variance. The description should include key

issues addressed in a project environmental assessment, which typically could include mitigation measures such as:

3.2.1. Timing development to reduce impacts on wildlife, fish, vegetation, and human use;

3.2.2. Alternatives to road access where applicable;

3.2.3. Minimizing the impact of roads by construction timing/methods, deactivation and access management;

3.2.4. Re-vegetation of disturbed areas;

3.2.5. Life-cycle maintenance plan for infrastructure (e.g., vegetation over pipelines, on-going access to compressor stations);

3.2.6. A comparative analysis of the environmental, social and economic outcomes of the two projects.

4. The relevant decision-maker may include conditions that will apply to a specific variance, based on the details of the proposal.

5. The agency approving the variance will advise MSRM of variance decisions in a rationale statement. This information will be summarized and reported at the annual Dawson Creek LRMP Implementation meeting.

AMENDMENT

In a manner that is consistent with the Dawson Creek LRMP, local or operational planning processes may, through more detailed inventories, mapping, research or public involvement, recommend changes to the *Dunlevy Creek Management Plan*. Recommendations for plan amendment will be communicated to the Regional Director of MSRM.

MSRM will review proposals for amendment. Proposed amendments may be subject to a third party review to ensure their consistency with the intent of the Graham Plan. MSRM, in consultation with participating regulatory agencies and stakeholders, may include conditions to the proposals that will help to achieve the desired results.

Minor plan amendments that result in an update to the Dunlevy Creek Management Plan may include:

- Revision of wording (not intent);
- Minor amendments to compartment boundaries and/or wildlife zones (maximum 100 hectares)
- Minor amendments to harvesting schedules (maximum one decade)
- Refinement (clarification) of approved recommendations, objectives and/or strategies

Major plan amendments that result in a significant change to the plan may include:

- Large amendments to compartment boundaries and/or wildlife zones (exceeding 100 hectares)
- Significant amendments to harvesting schedules (exceeding one decade)
- Major revisions to approved recommendations, objectives and/or strategies identified in the *Dunlevy Plan*

The *Dunlevy Creek Management Plan* will be reviewed in its entirety, including a detailed examination of significant revisions, immediately following the scheduled review of the Dawson Creek LRMP. The IAMC will provide guidance, through their scheduled review of the Dawson

Creek LRMP, to the Regional Director of MSRM to establish the Terms of Reference for the amendment and review process for the *Dunlevy Creek Management Plan.* The amendment and review process will be consistent with current legislation, regulations, and policies, and will involve stakeholder, First Nations, and public consultation.

The annual monitoring report will contain proposed plan updates. The Regional Director of MSRM will be responsible for review and approval of proposed minor amendments. All minor amendments will be documented and reported at the annual Dawson Creek LRMP Implementation meeting. The Regional Director of MSRM will establish the schedule and Terms of Reference for major amendments, consistent with current legislation, regulations, and policies.

Interpretation of Dunlevy Creek Management Plan

Where a concern is raised over the implementation of approved recommendations in the Dunlevy Creek Management Plan, the concern will be addressed directly to the affected agency(s). The responsible manager(s) will respond to the concern in writing. If the matter is not satisfactorily resolved, the concern will be forwarded to the Regional Director of MSRM for resolution recommendations.

Appeal of Resource Management Practices

Where the public or agencies raise concerns with specific resource management practices that are occurring within the Dunlevy Plan area, they will raise the issue directly with the affected agencies. Where there is an existing review or appeal process, the concern will be dealt with through it. For example, concerns over forest road construction will be dealt with under the *Forest Practices Code of BC Act*. Where there is not an existing appeal process, the local manager will respond to the affected party in writing. If the matter is not satisfactorily resolved, the concern will be forwarded to the Regional Director of MSRM for resolution recommendations.

DISPUTE RESOLUTION

Differences of opinion between government agencies, stakeholders, First Nations, and the public concerning the interpretation of recommendations contained in the Dunlevy Creek Management Plan and/or specific resource management practices may result in a dispute. Participants should try to resolve disputes promptly through direct and active discussion. However, if resolution cannot be achieved through these measures, participants are expected to advise the Planning section of MSRM of the unresolved issue specifying the areas of disagreement.
Recommendations from the Regional Director of MSRM will be shared with participating regulatory agencies, and reported at the annual Dawson Creek LRMP Implementation meeting. Using the principles of continuous improvement, these recommendations may be reflected in subsequent plan revision.

LIST OF FIGURES

(Map Envelope)

Figure 1	Plan area map
Figure 2	Forest tenure within Dunlevy Creek SMZ
Figure 3	Range, Trapping, Guide Outfitting Tenures and Alienated Lands Within Dunlevy Creek SMZ
Figure 4	Petroleum and Natural Gas Tenures and Wellsites Within Dunlevy Creek SMZ
Figure 5	Existing access and access restrictions within Dunlevy Creek SMZ
Figure 6	Proposed designated access and access restrictions Within Dunlevy Creek SMZ
Figure 7	Geothermal Potential within Dunlevy Creek SMZ
Figure 8	Access Zoning within Dunlevy Creek SMZ

APPENDIX 1

DUNLEVY CREEK MANAGEMENT PLAN
TERMS OF REFERENCE

Purpose of the Plan:

The Dunlevy Creek Management Plan represents a strategic land use plan—it is not a Higher Level Plan as defined in the *Forest Practices Code of B.C. Act*.

The purpose of the plan is to guide oil and gas development and the disposition of petroleum and natural gas tenures and to enable landscape unit planning while guiding forest development.

Purpose of the Process:

To draft a plan to guide oil and gas and forest development in the Dunlevy Creek Wildlife Habitat/Wilderness Recreation Resource Management Zone (RMZ). The plan will be consistent with the objectives and strategies and strategic direction contained within the Dawson Creek Land and Resource Management Plan (LRMP). The process will be designed so that the lessons learned and recommendations can be made that benefit other areas of the region and the province.

Scope and Scale.

Dunlevy Creek RMZ as defined in the Dawson Creek LRMP (Figure 1). Map products prepared as part of this process will be at a scale of 1:50,000 or larger.

Participants:

Technical Team

- Winn Hays-Byl, Ministry of Forests
- Elaine Armagost, Aboriginal Liaison, Ministry of Forests
- Teresa Morris, Ministry of Energy and Mines
- Ruth Christensen, Sr. Aboriginal Program Specialist, Oil and Gas Commission
- Rod Backmeyer, Ministry of Environment, Lands and Parks
- Elvin Gowman, BC Assets and Land Corporation
- Norm Quail, BC Parks

***Planning Team* (Above participants in addition to:)**

- Wayne Sawchuck, Chetwynd Environmental Society
- James Rhymer, Dawson Creek Trappers Association/District of Hudson's Hope
- Evan Saugstad, Canadian Forest Products
- Doug Russell, Louisiana-Pacific
- Geoff Morrison, Canadian Association of Petroleum Producers
- Dawn Cowie, BC Hydro
- Dale Hillman, Westcoast Energy Inc.
- April Moi, Northern Rockies /Alaska Highway Tourism Association
- Court Wright, Snowmobiling Association
- Carl Gitscheff, Outdoor Recreation
- Ian Stacey, BC Wildlife Federation
- Les Parsons, Peace Williston Outfitters Ltd.
- Halfway River First Nations
- West Moberly First Nations
- Saulteau First Nations

Facilitator

- Jim Forbes, Ministry of Agriculture, Fisheries and Food

First Nations Consultation:

Three First Nations, Halfway River, West Moberly and Saulteau First Nations will be invited to form part of the planning team. Aboriginal liaison staff of the Ministry of Forests and the Oil and Gas Commission are members of the technical team and will discuss with the First Nations their participation in this process.

Roles and Responsibilities:

The Technical Team will be responsible for the writing tasks associated with the Terms of Reference and Management Plan and the compilation and representation of data, including map production. The Technical Team will also be responsible for ensuring that the Peace Managers Committee and the Omineca-Peace Interagency Management Committee are informed of planning progress. The Planning Team will be responsible for reviewing products (Terms of Reference and Management Plan) and providing advisory comments.

Guiding Principles:

1. The participants will be mindful of all other interests and values in this area, especially those not represented in this process.
2. The participants will focus on presenting their values and interests rather than fixed positions. This approach will foster a greater understanding of the land and resource values requiring varying types of management and in making recommendations about the types of management.
3. The participants recognize that this planning process represents an implementation process that is guided by the objectives and strategies outlined in the Dawson Creek LRMP for the Dunlevy Creek area. The process will focus on how to develop oil and gas and forest resources while taking into account the special values of the area. The participants agree to familiarize themselves with the objectives and strategies of the Dawson Creek LRMP.
4. The Planning Team work will be carried out within the timelines agreed to below and will focus on reaching consensus (overall agreement) on draft management recommendations that are provided to the Technical Team. In the context of the Dunlevy Creek Management Plan, consensus is further defined as:
    - not using a voting system; and
    - agreement by the Planning Team on the final package of management plan recommendations. This process may result in "full agreement" or "partial agreement" with areas of contention documented, the issues and concerns described, and forwarded with the recommended plan.
5. Planning Team meetings will focus on providing information through progressive discussions of interests and values and issues related to management planning. The intent is for the Technical Team to draft recommendations on management plan objectives and strategies, and for the Planning Team to achieve consensus agreement on these recommendations prior to them being forwarded for approval.
6. The participants recognize that there are other development planning processes and allocation processes underway that will continue, in parallel, to this planning process.

Dispute Resolution:

Participants should try to resolve disputes promptly through direct and active discussion. However, if resolution cannot be achieved through these measures, the technical team can raise the unresolved issue with the Peace Managers Committee with the areas of disagreement clearly described. Recommendations from the Peace Managers Committee will be shared with the Planning Team, discussed at subsequent planning table meetings with results incorporated in the final plan.

Methodology:

1. Establish Technical and Planning Teams
2. Draft Terms of Reference and Plan Deliverables
3. Hold Workshop with Planning Team to:
   - finalize Terms of Reference and Plan Deliverables
   - define interests and values
4. Compile existing information in a specific format. Information may include: management objectives and strategies established in Dawson Creek LRMP; forest cover; petroleum and natural gas potential and existing tenures; biophysical, wildlife, fisheries and habitat inventories; other users such as guide outfitting, trapping and backcountry recreation tenures; and existing development (roads, wells, cut blocks). The plan will be developed using the best information available, including inventories used in the current Timber Supply Review and the Graham River Integrated Resource Management Plan. New information that may become available will be considered by the technical team and may be incorporated though a plan amendment.
5. Draft Plan with Management Recommendations and request written comments from Planning Team members
6. Hold workshop with Planning Team to discuss plan and recommend improvements
7. Finalize Plan
8. Plan Approval

Plan Products:

Plan deliverables will include recommendations on:

- general management guidelines
- specific management and operational terms to be included as conditions of future oil and gas tenures;
- temporal and spatial access constraints;
- access coordination opportunities;
- visual quality; and
- biophysical features, wildlife and fisheries habitat with identification of sensitivities and related mitigation options.

Maps depicting resource information and related access issues at a scale of 1:50,000 or larger will also be provided.

Plan Approval:

To enable landscape unit planning while guiding forest development, the District Manager of Forests will consider relevant information contained in this plan, and subsequent amendments to the plan, in the establishment of legal objectives for Old Growth Management Areas and Wildlife Tree Patches within the Dunlevy landscape unit; and in the approval of operational plans required under the *Forest Practices Code of B.C. Act*.

Approval for the plan will rest with the District Manager of Forests; the Director of Petroleum Lands, Ministry or Energy and Mines; and the Designated Environmental Official of the Ministry of Environment, Lands and Parks (as described in the *Forest Practices Code of BC Act*).

Plan Amendment:

Plan amendments will be drafted by the technical team, vetted by the planning team, and approved by those agency representatives responsible for plan approval.

Budget:

A budget of $15,000 was made available from the Land Use Coordination Office (LUCO) to the Ministry of Forests. These monies will be directed to this planning process and used to cover workshop costs, formatting of data, and plan production. All other costs will be covered from ministry base budgets. Planning Team members are responsible for covering any costs they incur associated with this process.

Time Frame:

To ensure that the planning process is timely, the Planning Team will work towards the following timeline:

▪ First Planning Team Workshop	➢ May 9/10 2000
▪ Second Planning Field Visit and Workshop	➢ June 8/9 2000
▪ Finalize Inventory Compilation	➢ June 30, 2000
▪ Third Planning Team Workshop	➢ July 11, 2000
▪ Draft Plan with Management Guidelines	➢ October 31, 2000
▪ Fourth Planning Team Workshop	➢ Week of Dec. 11/2000
▪ Finalize Plan and Plan Approval	➢ January 19, 2001

Additional Planning Team meetings may be scheduled on an as needed basis.

Existing Oil and Gas and Forest Tenure:

There are existing oil and gas tenures located within the Dunlevy Creek RMZ. Those tenures will be subject to the general management guidelines developed in this planning process. Oil and gas tenures disposed of during the planning process will contain the following caveat:

> "Parcel is within the Dunlevy Creek Management Plan; ongoing planning process; additional restrictions will apply to meet planning objectives"

The entire Dunlevy Creek SMZ is covered with existing forest tenures including tree farm license (TFL) 48, and pulpwood agreements (PA's) 7 and 13 for coniferous and deciduous timber, respectively. TFL 48 and PA 7 are managed by Canadian Forest Products Ltd., while PA 13 is held by Louisiana Pacific Canada Corporation.

The portion of these tenures that occurs within the RMZ will be subject to the general management guidelines developed in this planning process in a manner that is consistent with the Dawson Creek LRMP and recognizes the Graham River Integrated Resource Management Plan. Landscape level planning will consider spatial and temporal advantages and constraints to forest development that are identified during this planning process. Operational planning processes will consider information provided through this planning process, as required by the *Forest Practices Code of B.C. Act*.

Signed: _____
~~C. Gorman~~ COLIN MACKE
Director, Petroleum Lands Branch
B.C. Ministry of Energy and Mines

Signed: _____
J. Metcalfe
Designated Environmental Official
B.C. Ministry of Environment, Lands and Parks

Signed: _____
T. Dyer
District Manager, Dawson Creek Forest District
B.C. Ministry of Forests

Dated: SEPT. 14, 2000

APPENDIX 2

Letters Concerning Outstanding Issues

BRITISH COLUMBIA

Land Use Coordination Office

MEMORANDUM

Mailing Address: PO Box 9429 Stn Prov Govt Victoria BC V8W 9V1

Ref: 62431 File: 31090-250

Date: May 10, 2001

TO: Winn Hayz-Byl, Chair, Dunlevy Creek Planning Process Technical Team
Dawson Creek Forest District

FROM: David Johns, Assistant Deputy Minister
Land Use Coordination Office

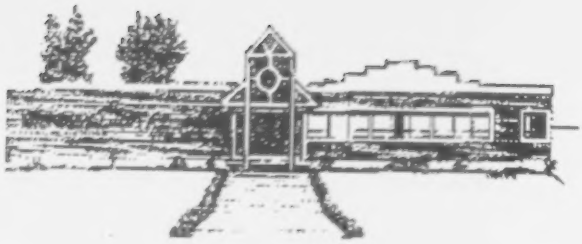
The Dunlevy process was convened to develop a management plan for the Dunlevy Special Management Zone for the purposes of guiding oil and gas and forest development while respecting the identified special values in this zone. The plan is to be consistent with the objectives and strategies and strategic direction contained within the Dawson Creek LRMP. Participants in such land use planning processes are encouraged to seek solutions to the land use challenges presented by the competing uses in the planning area. The Land Use Coordination Office recognizes the time and effort dedicated to this process by both government staff and non-government Planning Team members.

I am advised that some members of the Planning team have suggested that oil and gas exploration and development should be deferred for lengthy periods in a significant part of the planning area in order that access development can be coordinated with forestry operations - which may be decades in the future. One of the strategies in the General Management Direction (GMD) for energy does encourage access coordination between resource sectors where feasible. However, another of the strategies is to permit (ie. authorize) oil and gas exploration and development under the appropriate regulatory framework that promotes environmentally responsible development. Finally, the GMD objective is to provide opportunities and access for oil and gas exploration, development and transportation. On balance, it is my view that long term deferral as proposed in not consistent with overall LRMP direction; it would block oil and gas exploration and development, it would not provide opportunity.

I understand that the Planning Team has identified other measures to manage access and oil and gas activities in the Dunlevy SMZ that would conserve the wildlife, wilderness and other special values. I encourage the Team to pursue these other measures and bring the plan to completion in the near future.

David Johns,
Assistant Deputy Minister

cc: Joan Hesketh, Assistant Deputy Minister, MEM
Patrick O'Rourke, Deputy Minister, MEM
Michael Coon, Director, LUCO
Don Roberts, Chair, Peace Managers
Ray Schultz, Chair, Omineca-Peace IAMC



District of
Hudson's Hope

9904 - 100th Avenue
PO Box 330
Hudson's Hope, BC, V0C 1V0
Phone: (604) 783-9901
Fax: (604) 783-5741

June 12, 2001

Office of the Mayor

Ministry of Forests
9000 – 17th. Street
Dawson Creek, B.C.
V1G 4H8

ATTENTION: Wynn Hayes-Byle

Dear Wynn,

Some of the issues that we see that still need to be resolved are:

In order to accommodate the multiple users of the Dunlevy Special Management Area all resource industries (this includes Oil and Gas as well as Foresty) must follow the same development time-line that will provide the maximum benefit for all stakeholders and preserve the special designation of Wildlife/Recreation Management Area.

Roads should be only permitted within the area agreed to at the May meeting and any new roads should be designated non-permanent and deactivated as quickly as possible.

There should be buffer zones around special features such as the Hanging Moss Gardens and mineral licks that have been identified to the resource sector by Guide & Outfitters. Trails that will be used by Back Country Operators should also be protected.

Clearcutting Blocks should be discouraged and reconfiguration of some of these blocks should be considered in order to protect the movement of wildlife. When possible other forms of harvesting such as horse-logging should be encouraged.

Visual Quality is a very important issue especially in areas that are in full view of tourists either on Williston Lake or enjoying the many Back Country hiking opportunities.

Sincerely,

L.M. Harwood

L.M. Harwood
Mayor
District of Hudson's Hope

Trappers Representative
PO Box 168
Hudson's Hope, B.C. V0C 1V0
Phone: (250) 783-5268
June 05, 2001

Ministry of Forests
9000 – 17th. Street
Dawson Creek, BC. V1G 4H8

Attention: Winn Hays-Byl

Dear Winn:
The following concerns need to be addressed at the next meeting:

1. Oil and Gas Industry and Canfor in Fort St. John must observe the same time Constraints regarding development as agreed to with the Forest Industry.

2. A definite area, as per our agreement, is drawn into the plan where harvesting and Development be encouraged without roads, if possible or roads are designated non-permanent only.
   This area should be applied around know features (e.g. Dunlevy Lake, Waterhole Lake, Hanging Moss Gardens and 20-Mile Ridge Road) to encourage quality recreation. Silviculture systems, other than clear-cutting should be preferred (e.g. horse-logging and selective harvesting, etc.)

3. The 275 and 276 Cut Permit should be changed to permit use of silviculture systems other than clear-cutting. These blocks were not designed to enhance or promote any recreational use and were approved before the present process began.

4. That an old growth management or wildlife habitat area be established on Adams Creek.

5. Visual Quality standards may range from Preservation to Partial Retention from Williston Lake, Dunlevy Road and 20 Mile Ridge Road. Modification is not an Acceptable Visual Quality for these viewpoints.

Thank you for the opportunity for input and we'll see you on July 12th.

Yours truly

James Rhymer

TO: Dunlevy Creek S.M.Z. Planning Committee

After more than a year of meetings and serious 'give and take' negotiations, I am pleased with the innovative logging plan. The time frame allows us the opportunity to develop the area for recreation as well as guide outfitting.

I am greatly disappointed, frustrated and disgusted that the Dept. of Energy & Mines has waited until the conclusion off these negotiations to drop their negative bombshell (no alternative plan offered).

"Road access" is the key phrase to all interested parties. Energy & Mines are free to explore using unroaded methods unless in conjunction with the logging plan!!

Without a definitive schedule on roaded access, I will find it impossible to develop the recreational value of the area. Four full times jobs have been curtailed pending the outcome of the Regional Manager's decision.

In our first year of operation, nearly $200,000 was spent in the local area, who knows where this number can grow to. Recreation is the key to our growth.

I strongly urge you to observe the Oil & Gas road at Coyote Creek. I find it incredible that road was allowed to be built where it is!

Our future and many jobs depend on your decision.

Respectfully,

Les Parsons
Peace Williston Outfitters Ltd.

APPENDIX 3

Operational Guidelines for Oil and Gas Exploration and Development Activities within the Dunlevy Creek SMZ

Purpose

The purpose of these operational guidelines is to provide proponents and/or operators with direction for on the ground activities, from geophysical survey operations, through initial well drilling, to the abandonment and reclamation of development. Proponents and operators will be encouraged to discuss any areas of concern or questions to the interpretation of these standards with the Ministry of Energy and Mines (MEM) and Oil and Gas Commission (OGC) staff.

These guidelines do not alleviate the responsibility of proponents to comply with all federal and provincial legislation. Selection of guidelines will be based on individual requirements of operational activities, and individual guidelines may be amended after consulting with the OGC staff.

General Guidelines

Development Plans

Development plans must be submitted to the OGC after consulting with other operating companies and tenure holders in *the Dunlevy Plan* area. While recognizing the issues of confidentiality and competitive requirements, tenure holders or their representatives may be required to meet with OGC and MEM staff, as a committee, to ensure that opportunities for cooperative and coordinated access occur. Proponents are expected to coordinate their plans and activities with other operators, to the greatest degree practical, to reduce area impacts. This can involve pooling efforts and resources; use of common roads, pipeline and utility right-of-ways, and general infrastructure. Efforts should be aimed at minimizing surface impacts and disturbances. Plans for deactivation and rehabilitation of roads and trails at the end of each permitted phase of development must be incorporated in the development plan.

At each stage of development, a proponent will be required to provide the best estimate of the overall extent of development. This is required to ensure that the scope and potential impacts of the proposed total development are clearly understood and identified.

Applications for well licenses and other surface disturbances, such as pipelines and facilities, must be submitted as a part of the development plan, so as to project scenarios and development infrastructure options.

Development Plan Requirements

The following paragraphs outline the development plan requirements for each phase of exploration and development:

1. ***Initial Drilling***

   It is recognized that a definitive plan is not feasible at the initial stages of development. However, it is important that with the first exploration well, some outline of the conceptual developments be provided based on the technical data used to determine the placement of the initial well. This information will be helpful to scope potential impacts and related issues. The development plan should attempt to identify locations for additional wells, should address conceptual pipeline and production facility plans, identify access options, and include details of mitigation measures and options for

minimizing the impacts of drilling, production, and testing operations. This phase will include baseline environmental information for the area of the potential development. This information, referred to as an "impact assessment", is intended to assess specific sensitivities of a given area, as well as provide a broader assessment of access routes and potential development, and to evaluate mitigation options.

2. ***Pool Delineation***
Once a pool has been discovered, a more detailed delineation development plan, inclusive of additional proposals and more definite plans for mitigation of impacts from drilling, production, access routes and testing operations (e.g. pads, innovative testing methods), will be required. Elaboration of pipeline/facility proposals would also be expected. Delineation proposals should include proposed well locations and associated drilling and waste management options, access, and test/short-term production scenarios.

3. ***Pool Development***
Ongoing production and pool development will require an operational management plan encompassing all facilities, access routes, pipelines, and associated infrastructure. The overall objective is to minimize intrusion and continue to mitigate the impacts wherever possible.

RECLAMATION GUIDELINES

Reclamation plans must be submitted and approved as part of the construction permitting and approval process. Objectives of reclamation in *the Dunlevy Plan* area are to return the site to a condition where:

1. Wildlife habitat capabilities are equal to or greater than initial conditions
2. Erosion control equal to or greater than conditions found on adjacent undisturbed sites.

Immediately following completion of a pipeline, abandonment of a wellsite, or the abandonment of any road, appropriate reclamation of the subject lands will take place. Where seasonal barriers prevent the reclamation of any site, the proponent must begin reclamation as soon as seasonal barriers have changed.

If the wellsite is successful, all areas on the well pad not necessary for eventual production will be reclaimed. This would involve bringing all slopes back to their original grade and seeding the disturbed areas. It may also be necessary to install silt barriers at selected locations to control off-site sedimentation until vegetation is re-established on the disturbed areas. The well pad may have to be fenced if it is deemed necessary to protect wildlife values.

Drilling

1. Additional back-filling and re-contouring may be required to make allowances for settlement and establishment of the appropriate grade. Stockpiled topsoil and overburden shall be spread in an appropriate profile over the site. The entire site should be re-vegetated to native species, where possible.
2. After completion of all initial cleanups, sumps should be mounded up above the original level (extremely important during the winter months).
3. Surface drainage shall be diverted around disturbed areas; where this is not possible, erodible material must be protected by rip-rap or some other acceptable means.

4. Restore any natural drainage, volume and route, as near as possible to its original state.

Recontouring

All cuts that are made in steep or rolling terrain will be re-graded and re-contoured to blend into the surrounding landscape and to re-establish the natural drainage patterns. Emphasis during re-contouring should be to return the disturbed areas as close as possible to its original contour, to stabilize slopes, control surface drainage and to provide a more aesthetic appearance. Ruts and other scars should also be filled.

Scarification

Prior to re-spreading topsoil, disturbed areas will be scarified to loosen areas compacted by equipment traffic. Scarifying by ripping promotes water infiltration, better soil aeration and root penetration. In sloping areas scarification also provides a roughened interface between the topsoil and the subsoil to reduce the potential for soil slippage.

Ripping should be at least 12 inches deep and spaced no more than 16 inches apart. Scarification equipment may be required to make multiple passes over the same area to adequately relieve compaction. Ripping should be conducted when materials are dry to improve shattering of compacted layers. Every effort should be made to scarify along the contour to reduce erosion.

Topsoil

Topsoil salvaging on Crown land shall follow existing standards.

Seeding

Immediately after stockpiling, topsoil of any disturbed areas will be seeded with a mixture that is in accordance with the guidelines set out by the Oil and Gas Commission; consultation with B.C. Environment is recommended.

Road Reclamation

1. All precautionary measures, such as cross ditches and water bars, to prevent soil erosion and sedimentation to streams must be taken immediately after the road is put to bed.
2. All stockpiles form disturbed areas are to be seeded. This prevents loss of soils due to erosion, as seeding will stabilize soils and provide vegetative cover until reclamation begins.
3. Seeding requirements to meet reclamation objectives will be done in consultation with MoF and WLAP.
4. Seed mixes that allow re-establishment of native species should be used in reclaiming disturbed areas. Seed mixes must possess the following characteristics: Fast growing, self-sustaining, little to no maintenance requirements and create limited fire hazard. It is critical that certified seed be used and does not contain noxious weed seeds. The seed types and species are prescribed by the MoF.
5. When seeding newly cleared areas to prevent erosion, avoid species that are palatable to bears. Benefits to a bear from roadside forage rarely outweigh the disadvantages of being close to roads.
6. All road construction within provincial grazing reserves must be seeded as specified by the MoF.
7. Seeding should be done after the spring thaw or in late fall. Soil moisture levels are most favourable for seed germination and seeding survival during the spring and early summer.

8. Where seeding cannot be carried out during the optimum period for germination, increased seeding rates and fertilizer applications must be employed to ensure successful re-vegetation.

9. Apply fertilizers prior to or during the seeding of disturbed areas. The objective is to provide sufficient nutrient concentrations in the topsoil. The nutrients most commonly found lacking in the soils are nitrogen, phosphorous and sulphur. If soil conditions are unknown a soil analysis may be necessary to determine the type and amount of fertilizer required. No fertilizers to be applied within 10m of any stream.

10. Disturbed sites should be contoured as closely as possible to naturally appearing topography and an appropriate soil profile.

11. Specific site prescriptions will detail proposed end use and activities necessary to meet this use. Roads on environmentally sensitive areas will require complete re-contouring.

12. Soil profile compaction on disturbed areas will require decompaction to assist root and soil moisture penetration.

13. On sites where erosion control problems are identified, mulch may be required to hold seed in place. On disturbed slopes this will control erosion until vegetative cover is established, improves moisture retention and prevents surface crusting of the soil. Where biodegradable straw mulch is used it should be covered with natural fibre netting held in place by wooden pegs. Cellulose fibre mulches should be used to hold seed in place on very steep slopes. Asphalt mulch will not be used as it tends to seal soil and contribute to excessive heat absorption. Where brush mulch is used, limbs and small stems should be mechanically crushed after disposal. Properly deposited slash will assist in erosion control and re-vegetation by providing micro-sites for seed germination and plan growth; decomposition will provide additional nutrients thus improving reclamation capability. Mats are cost-effective in areas where sites would otherwise require re-grooming and reseeding several times before they are stabilized.

14. Chemical binders or soil stabilants are applied in aqueous solution for the purpose of penetrating the soil surface and reducing erosion by physically binding soil particles. Chemical soil binders should be used to protect disturbed soil from wind and water erosion during delays in grading operations and also during hot and dry periods after final grading.

15. Steep, dry or south-facing slopes, characterized by sensitive soils or where vegetation establishment would be difficult, may require more intensive efforts to hold soil in place until vegetation is re-established.

16. Fertilizer and chemical binder/soil stabilizers application methods must prevent entry of these products into streams.

17. Abandoned pits should be stabilized by re-contouring where possible and re-vegetating. They must be replaced in the proper sequence over the re-contoured pit area. Topsoil is to be salvaged from all over burden and aggregate stockpile sites.

18. Topsoil should not be spread in recontoured borrow pits unless these pits are self-draining.

APPENDIX 4 ***Summary of Planning Team Endorsement Comments***

Plan Endorsement forms were received from the following Planning Team participants:

Name	*Affiliation*	*Date Received*	*Endorsed*	*Comments*
Court Wright	*Outdoor Recreation*	*July 23, 2001*	*Yes*	*No*
Lenore Harwood	*Mayor, District of Hudson's Hope*	*July 25, 2001*	*Yes*	*Yes*
Evan Saugstad	*Forestry – Softwood*	*July 26, 2001*	*Yes*	*Yes*
Uli Bergmann	*Energy – BC Hydro*	*July 26, 2001*	*Yes*	*Yes*
Ian Stacey	*BC Wildlife Fed'n*	*July 26, 2001*	*Yes*	*Yes*
Les Parsons	*Guide Outfitting*	*July 26, 2001*	*Yes*	*Yes*
James Rhymer	*Trapping Rep.*	*July 27, 2001*	*Yes*	*Yes*
Dawn Cowie	*Energy – BC Hydro*	*July 27, 2001*	*Yes*	*Yes*
Doug Russell	*Forestry – Hardwood*	*July 27, 2001*	*Yes*	*Yes*
Wayne Sawchuk	*Environment Conservation Rep.*	*August 01, 2001*	*Yes*	*Yes*
Dale Hillman	*Westcoast Energy Inc.*	*Sept. 26, 2001*	*Yes*	*Yes*

The following paragraphs summarize the Planning Team participants' comments, as noted on their respective endorsement forms. Government responses to questions raised in those comments and/or clarification of issues is offered in the italicized text.

1. Stakeholders were commended on their "incredible co-operation in resolving issues". However, considerable disappointment was expressed concerning the lack of co-operation from the oil/gas sector, and also, the Ministry of Energy & Mines.

2. The plan recognizes the significance of fish and wildlife populations in the area. Collectively, the expectation was expressed that any development in the area will endeavour to abide by the plan and minimize impacts on fish and wildlife by limiting road construction and the need for stream crossings to avoid increased sedimentation and habitat disturbance.

3. Failure to temporally and spatially co-ordinate development, particularly roaded access, among all stakeholders was considered to seriously threaten the special wilderness and wildlife habitat values of the area, specifically for guide/outfitting and back-country commercial recreation, and also for general recreation. The requirement to use unroaded

methods where development timelines did not coincide among resource developers was stressed. Without this requirement, the plan will fail to protect the values noted and endorsed by the Dawson Creek LRMP.

4. To maintain wildlife values, the need to determine their historical and present ranges in the plan area was stressed as a priority. Conflicts with industry may be avoided by completing wildlife/fur-bearer studies prior to development.

5. The need was expressed to review and possibly revise specific (i.e., prescriptive) wording in the plan's recommendations at its first periodic review to ensure consistency with strategic forest direction (specific reference was made to recommendations 1 and 3 on page 23). Clarify the intent of these recommendations and define the future desired (forest) condition.

6. Additional comments stated that alternatives to herbicide application must not include domestic sheep (primarily due to concerns for disease transmission); and that regeneration delay for natural deciduous is generally achievable within one year. A concern was expressed regarding the future timber supply implications of using a one- vs. two-year regeneration delay.

   A two-year regeneration delay is currently being modelled through the Timber Supply Review process for both the TFL and TSA. It is based on current practice, and is considered reasonable. Although a one-year regeneration delay may be achievable, current practice indicates that (on average) a two-year regeneration delay is more realistic. Recall that regeneration delay is the time period measured from the start of harvesting disturbance to the establishment of regeneration—where harvesting is extended over one season, a one-year regeneration delay cannot be achieved for the block. Timber supply impacts associated with a one- vs. two-year regeneration delay are insignificant.

7. The implementation recommendation that MoF monitor (harvesting) performance rather than use of a third-party auditor was questioned.

   MoF is required to report/confirm licensees' harvesting performance for timber supply analysis. This monitoring role is considered separate from an auditing role that would employ a third party (i.e., for forest certification). The Ministry of Sustainable Resource Management is the likely candidate for undertaking this auditing role, for all industrial activities.

8. Comments concerning recreational values were expressed: Recreational access for non-commercial users was not given a high enough priority in the plan; and tourism values associated with the regionally significant destination, Bennett Dam, and visual quality associated with the area must continue to be recognized in future development and planning processes.

   Although the terms of reference for the Dunlevy Creek Management Plan stated that this planning process was not intended to address recreational planning, this comment emphasizes the need to develop a Recreational Plan for the Dunlevy SMZ (as noted in the section, Further Implementation Recommendations).

9. The plan recognizes BC Hydro's flood reserve along Williston Reservoir. Beyond this recognition, BC Hydro advises all plan participants to contact BC Hydro for information on the shoreline before considering any development (to facilitate shoreline erosion management and safety).

10. The plan recognizes the importance of resolving the outstanding issue of coordinated access management, to minimize the need for plan variances. The need for a variance appears to contradict the original intent and efficiency of the plan, as expressed in the Introduction and

on page 1 of the plan document.

11. Mr. Dale Hillman requested that, as a representative for Westcoast Energy Inc. (a company not having an interest in the subject area at this time), he does not have the authority to speak on behalf of the Oil and Gas Sector. For the record, Mr. Hillman is neutral on the question of alternative access methods.

Additionally, comments were submitted by the Environment/Conservation sector on December 17th, 2001 that further clarify their concerns regarding roaded industrial development, and emphasize the need for temporal and spatial coordination of road construction among industrial users, and advocate the use of unroaded technology. (*Refer to letter submitted by Chetwynd Environmental Society, Appendix 2*). This sector also expressed the importance of establishing a monitoring committee that includes public participation.